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ABSTRACT

Five papers on African linguistics are presented. "Observations on Some Derivational Affixes in Kiswahili Predicate Items" (Assibi Apatewon Amidu) examines the few morphemes recognized in the Swahili derivational affix system and suggests changes in the rules of vowel harmony and in presentation and representation of the affixes in use. "Dagaare Syntax: A Two-Level X-Bar Account" (Adams B. Bodomo) presents a formal analysis of aspects of the morphosyntactic structure of Dagaare and related languages, using the two-level X-bar system. In "The X-Bar Theory and the Ewe Noun Phrase" (James A. B. K. Essegbey), previous research on the nominal phrase in Ewe is reviewed and discussed in relation to X-bar theory. In "Affix Order in Fulfulde and the Scope Interpretation" (Ole T. Fagerli) it is proposed that the scope interpretation of affix order can not, even theoretically, account for every possible combination of derivations in Fulfulde. Data are drawn largely from one dialect. "A Diachronic Study of Fula Conjugation" (Rolf Theil Endresen) reconstructs conjugational endings in two hypothetical earlier stages of Fula, with a detailed presentation and discussion of the steps in the development from earlier stages to modern dialects. Each paper contains references. (MSE)

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OBSERVATIONS ON SOME DERIVATIONAL AFFIXES IN KISWAHILI PREDICATE ITEMS*

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1.0. INTRODUCTION

Kiswahili predicate items(p-items) have been the subject of much linguistic descriptions over the past few years. One particular area which has been examined by scholars is the so-called verbal derivational system in the language. The term verbal derivation itself is a little ambiguous. Traditionally, this has meant two things: (a) the process by which new predicate items are formed in the language especially from words of foreign origin. Examples of these are:

(1)

Adjective	Derived P-item
safi(clean, neat) ------(< arabic)	safisha(make clean, clean)
imara(firm, strong)----(< arabic)	imarisha(make firm)
	imarika(be firm, strong)

Noun	Derived P-item
shughuli(business)----(<arabic)	shughulisha(occupy, engage)
	shughulika(be occupied, engaged)

and (b) the process by which predicate roots which form the BASE of the p-items may have their form and meanings modified by various affix morphemes. These affixes are, in fact, the same as those used in the formation of new p-items from other subcategories of the grammar such as the examples given above. Examples of these are:

(2)

Predicate Item	Derived P-item
piga(hit, beat) ------(< bantu)	pigisha(cause to hit, beat)
soma(read) ------(< bantu)	somesha(teach, make s.o. to read)
rudi(go back) ------(< arabic)	rudisha(cause to go back, return)

In our opinion, the failure to make a distinction between 'true' derivation i.e. 'predicatization' on the one hand, and 'modification' on the other, in our descriptions of the p-items has made it difficult to generalize

* This article was developed from a seminar paper presented in the Department of Linguistics, Univ. of Trondheim, Norway, on 3rd Nov., 1992. Iam grateful to Mr. Adams Bodomo for reading through the draft and pointing out some of its defaults. Iam, however, responsible for all shortcomings.

significantly about the real nature of p-derivations in Kiswahili and about the nature, source and function of the affixes involved in the whole process of predicate item derivation. Whatever our misgivings are, we have, nevertheless, a fertile ground to till.

Kiswahili p-item derivations have been given various names over the years. Some scholars call the process 'verbal extension', or 'extended verb forms'. Others prefer the terms 'derivative verbs' and 'verbal derivation'. All these scholars have, as far as we know, disagreed little over the number of affixes used in the Kiswahili p-item derivational process. There is, however, no complete unanimity over how these morphemes should be represented in a description of p-items though the functional names given to each form have become more or less established nomenclature. We find, therefore, that Ashton(1944) has one form of presentation which is more pragmatic to the newcomer while Polome(1967) adopts a presentation which is more linguistic and so is instructive to the researcher. Whiteley(1968) adopts an almost new classificatory approach properly suited to computational methods.

In this paper, we shall look at the eight or nine morphemes recognised in the derivational system and make suggestions for changes in the rules of vowel harmony and in the presentation and representation of the affixes in use.

2.0. PREDICATIZATION AND MODIFICATION: AN ANALYTIC NECESSITY

The first significant observation is one of methodology. In the introduction, we mentioned that there are two types of predicate derivation in Kiswahili even if the derivational affixes are often the same. These two processes have been treated as one single derivational process by Kiswahili scholars since 1850. (See Krapf(1850), Steere(1870), Sacleux(1909 and 1939), Ashton(1944), Polomé(1967), Whiteley(1968), and others). For this reason, no distinction is made in studies of predicate derivation between, for example, 'safisha' and 'pigisha' as regards their fundamental morphological differences. Our view is that the existing method which puts the two together is unsatisfactory. In both 'safisha' and 'pigisha', the derivational affix(d-affix) is #ʃ#, and #a# is the final indicative positive affix. However, the analytic fact is that the base of 'safisha' comes from an item of a different subcategory in the grammar of the language. The base SAFI is an adjective which is MADE a predicate item by means of a p-item derivational affix #ʃ#. Linguistic empirically, therefore, SAFI(adjective) has been 'predicatized'. Now that it has been predicatized, it becomes a member of the predicate class. However, as a member of the predicate class, its root is {safiS} and not {safi} as is often assumed. Now, if we turn to 'pigisha', we observe that this comes from a base form PIG(hit) whose root is {pig}. When the indicative affix #a# is added to the root, we get 'piga'(hit). The BASE and ROOT are the same and are predicate category morphemes. It is not the result of any CONVERSION or PREDICATIZATION process. The p-item form and meaning of the root may be MODIFIED by means of d-affixes such as #S#. An example of modification is:-

#pig# + #S# ---> ##pigi S##. If we add the indicative affix #a#, we get the p-item 'pigisha'(cause to hit). It seems clear, in our view, that only 'pigisha' qualifies as a 'modified extension' of 'piga' while 'safisha' is not one such 'extension'. The lexical item 'safisha' is a new p-item or verb in the predicate group.

The description above has attempted to distinguish 'true' derivation i.e. predicatization from 'extension' i.e. modification. This reveals important and interesting generalizations about the nature, source and function of the affixes in the predicate derivational system. The first of these generalizations is that every predicate item has a base form. The base form is the morpheme primitive which contains the meaning of any subsequent lexical predicate item or verb. It cannot be extended by affixes. Base forms are either **inherent** or **derived**. Inherent base forms are those which exist 'in esse' as predicate forms and are not introduced from other categories of the grammar. PIG is inherent in this sense. Derived base form are items of other categories of the grammar which can be lixicalised as predicate items. SAFI is an example an adjectival base form which can be lexicalised to generate predicate items. We add to the base form concept the notion of root. The root is the smallest predicate item morpheme that can participate in a predication with or without an indicative modalic marker such as {a}. The base form SAFI does not qualify as a root of a p-item by this definition, but PIG qualifies. E. g.

*a) mtoto alisafi ngoma(the child cleaned the drum)
b) mtoto alisafisha ngoma(the child cleaned the drum)
c) mtoto alipiga ngoma(the child beat the drum)

The examples show that the root of SAFI is {safish} not {safi} but the root of PIG is {pig}. Only roots, we may conclude, can be modified by derivational affixes to extend their range as predicate items. E. g. pigisha. safishika(be made clean) etc.

Linguistically, therefore, we find that there is a comparison between our predicatization on the one hand and nominalization within the grammatical system of Kiswahili on the other. Kiswahili grammar is, in this sense, similar to the grammars of many other languages of the world.

The second generalisation about predicatization is that the morphological base rules which derive predicatization and modification are distinct and non interchangeable. The formal distinction is stated as follows:

(a) X + p --> P E.g. haramu(illegitimate); haramisha(forbid); fupi(short) [< Bantu]; fupisha(shorten)

(Where **X** is any category or subcategory item other than **P** and **p** is a d-affix of **P**.)

(b) P_j + p --> Pp E.g. gonga(strike); gongesha(cause to strike); gongeshea(cause to strike at/for) etc.

(Where $\mathbf{P_j}$ is any category or subcategory item **P**, whether root or stem(modified/extended) and **p** is a d-affix of **P** which yields a form of **P** as **Pp**).

2.0.1 **Predicatization and Double Derivational Affixes**

We can see from the above analysis that items which undergo predicatization were not predicate items prior to the derivation. The derivational affixes of p-items have two functions: a) to extend the range of meaning of inherent predicate items(verbs), and b) to create predicate items out of items which are usually non-predicate items. The latter functions of derivational affixes has often been misunderstood. The result is that a predicate item like 'sawazisha'(make equal) is often described as evidence of 'double causative'. Such a description is far from being linguistically empirical for two reasons. Firstly, the extended form of 'sawaza' which is 'sawazisha' is treated as though it has the same derivational status as 'pigisha', for example. Secondly, the simple form 'sawaza' is treated as though it has the same derivational potential as the simple form 'piga'. The double causative claim suggests that the structures of the two forms differ as follows:

(i.a)	Adjective	Derived P-item with /z/ or /S/ of 'causation'.
	sawa(equal)	sawa+z+a > sawaza(make equal)
	safi(clean)	safi+S+a > safisha(make clean)

(i.b)	Predicate Item	Extension of P-item with /S/ 'causative of P' ?
	sawaza(make equal)	sawaz+iS+a > sawazisha(make equal)
	safisha(make clean)	?safish+S+a > safishisha(?)

Compare (i.a-b) to the inherent p-items 'piga'(hit) and 'shua'(let down),

(ii.a)	Predicate Item with no inherent causation	Extension of P-item with /S/ 'causative of P'
	piga(hit)	pig+iS+a > pigisha(cause to hit)

(ii.b)	Predicate Item with inherent causation	Extension of P-item with /S/ 'causative of P'
	shua(let down)	shu+S+a > shusha(let down)

In the data (i) and (ii) we notice the important differences between predicatization and modification(extension). The base form of 'sawaza' is SAWA derived from an adjective {sawa}(equal, same). From this base, a simple p-root is derived as {sawaz}. Now that {sawaz} has become a member of the predicate class, it can take an indicative affix such as {a} to give 'sawaza'. The simple p-item can now take extension affixes of the class of predicate items. It is, therefore, believed that it can take the causative affix such as /S/. We,

therefore, get, it is claimed, 'sawazisha' as causative of 'sawaza'. On the other hand, the base form of 'piga' is PIG. It is not derived from any other source but it is **inherent** to the predicate class. From this base, we get the p-root {pig} which can take the indicative marker, inter alia to produce a simple p-item 'piga'. The simple p-item may now take extension affixes of the class of predicate items such as /S/. We get as a result 'pigisha' as causative of 'piga'. The status of 'piga' and 'sawaza' are in some sense different in derivational terms. 'Piga' is inherent but 'sawaza' is **derived**. The derivational potentials of 'piga' and 'sawaza' require a separate and detailed study. We shall not go into these here. We wish to present, however, our own analysis of 'sawazisha' and 'safishisha'. In our view, 'sawazisha', 'safishisha' and such-like items are derived from stative forms in line with proposals made by Polome(1967:89-90) regarding the origin of the form /S/ in Kiswahili.

a) root[sawaz]+stative[ik] > sawazik(be made equal)
root[safish]+stative[ik] > safishik(be made clean)

b) root[sawaz]+stative[ik] +causative[j] > sawzish(cause to be made equal)
root[safish]+stative[ik] +causative[j] > safishish(cause to be made clean)

Rule ==> /k/ + /j/ --> /S/

Our analyses show that the so-called double causatives are not double at all in their underlying description. The so-called second causative is the result of sound assimilation between a stative and the old Bantu causative and not a case of a causative 'growing on' another causative.

The above illustrations tell us that derivational affixes which function as predicatizing morphemes(verb forming morphemes) cannot be analysed literally as if their function is one of modification or extension. The d-affixes used as predicatizing morphemes give predicate status to items of other categories of the grammar. One way to expose the fallacy of an analysis is to ask a question such as: 'What is Y a causative of, (stative, applicative, static, reciprocal et alia of)?'. Thus the question 'What is 'sawaza' causative of ?' is quite meaningless since adjectives have no causatives though they may inherently imply causation. But to imply causation is not the same thing as being derivationally causative. Thus the use of the 'causative' affix means that the newly formed p-item implies causation but it is not a causative p-item. However, under the so-called double causative description, 'sawazisha' would be causative of 'sawaza'. We find this quite far-fetched since no inherent p-item of Bantu origin behaves in this way. The datum (ii.b) illustrates how causation without causative affix extension is handled in Bantu. We can see that the base morpheme SHU has a root {shu}. This gives us a simple predicate item 'shua' which means 'let down, lower'. From the simple p-item we get the causative 'shusha' which means 'let down, lower'. We see that the simple form is not an extension of the base. It, however, implies causation as part of its inherent meaning. On the other hand, 'shusha' is the extension of the simple p-item 'shua' and it is derivationally causative and so has the causative d-affix /S/. Only context and underlying description can disambiguate the meaning of the

two items. Among the Waswahili, the simple form is now often used to refer to the launching of a boat or ship and the causative of the causation form is used for other objects which are not ships or vessels. It is only in this sense that one can speak of 'double causatives' and still make sense. But to admit such cases is to open up a pandora's box of 'double stative, double applicative, double static etc.,'. We think that on grounds of linguistic empirism, the attempt to find doubles of the p-item derivational affixes cannot be defended generally in Kiswahili without 'bogus philosophizing'.

We conclude this section by emphazing that predicatization is a p-item forming derivational transformation and the predicatized items may have extension affixes as for inherent p-items. In what ways they may behave differently in their derivational potential from the inherent p-items once they have predicate status is a matter which needs further research.

3.0. A TABLE OF P-ITEM DERIVATIONAL AFFIXES

1	2	3	4	5	6	7	8	9
Applic ative	Passive	Stative	Causat -ive	Revers -ive	Static	Contac tive	Associ ative	Incepti ve
I	w	k	j	U	am	at	an	p

The table above shows the total number of p-item affixes recognized at present in the Kiswahili 'derivational' system. The Kiswahili p-item normally, but not always, has a base form(B), such as PIK (cook) which functions as a root, such as {pik}. Affixes may be added on to the root. For example, {pik} + {I} > {piki}. The process is subject to rules of vowel harmony in some cases. The 'applicative' and 'reversive' affixes are those which are usually conditioned by vowel harmony rules, in our opinion .

4.0. VOWEL HARMONY IN P-ITEM DERIVATION

When a vocalic or consonantal sound in the root comes into contact with or is in the neighbourhood of a d-affix, sound changes may result in the final out-put of the predicate item. For example, [t] in PAT (get) plus {j} of the 'causative'(no. 4) produces a voiceless palato-alveolar fricative [S] in the final out-put as follows:

[[pat] +[j]] --> [paS]

This is how we get the p-stem 'pasha'(inform) in Kiswahili. The most difficult types of sound harmony are those which involve vowels. Sound changes resulting from vowel plus vowel interaction are mostly found when the 'applicative'(no. 1) and the 'reversive'(no. 5) derivational affixes occur in the environment of a root. One of our principal objectives is to reanalyse the vowel harmony rules as they affect these two affixes before predicate roots and show

how traditional assumptions have failed to pick out rather important generalisations about this type of vowel harmony in Kiswahili, and, perhaps, Bantu languages. The traditional view of vowel harmony, in these instances, may be summed up as follows:

Vowel Harmony Rule,

> The quality of the vowel in the affix is/becomes the same or nearly the same as the one in the root.

The vowel harmony rule requires that if the vowel in the root is a high or mid vowel, then the quality of the vowel in the affix must be of the same height(whether front or back). There are some vowels which do not conform to this rule in traditional descriptions but are treated as if they are governed by the same rules. It is these that we shall throw a searchlight on in 4.1-4.2. As a morphological convention, we use capital letters to represent the morphophoneme which stands for the different allomorphs of the morpheme. There is, however, no consistency among linguists on the choice of the capital letter which stands for a morphophoneme. In the table given here, we use -I- (no. 1) to represent the vowels / i, e /, and -U- (no. 5) to represent / u, o / (cf.Whiteley(1968), and Hurskainen(1992) also). Other scholars prefer -E- and -O- (cf. Polome(1967)). The general picture, in the literature, for the 'applicative' and 'reversive' vowel harmony rules is as ff:

A. <u>The Applicative Harmony Rule</u>

#I# > i /-- i, u, a. (< P . rt.)
>e /-- e, o. (< P. rt.)

E.g. i) P.rt = kunj (fold) kunj+#I#> kunji(fold for,...)
= pit (pass) pit+#I#> piti(pass to, by,....)
= pand (spread) pand+#I#> pandi(sow for, with,..)

ii) = sem(say) sem+#I#> seme(say to,...)
= som(read) som+#I#> some(read about, to,..)

Grammarians like Ashton(p. 214-217) give the form of the affix as IA, EA, or LIA, LEA. A form ILIA, ELEA is also recognised as the reduplicated(and in some cases 'intensive') form of the 'applicative'. Polome(p. 84-85) is of the view that the morphophoneme is #E#. The form is #El# but /l / is often lost intervocalically unless its reduplicated form is used. The reduplicated form is said to be #ElEl# i.e. -ili-, -ele-.

B. <u>The Reversive Harmony Rule</u>

#U# > u /-- i, u, e, a. (< P. rt.)
> o /-- o. (< P. rt.)

E.g. i) P. rt = fumb (shut) fumb+#U#> fumbu(open,...)
= pind (bend) pind+#U#> pindu(unbend,...)
?= fyat (clutch) fyat+#U#> fyatu(release,....)
?= remb(decorate) remb+#U#>rembu(disfigure)

ii) P. rt = shon (sew) shon+#U#> shono(undo sewn work,...)
*= remb(decorate) *remb+#U#> *rembe(.....)
*rembo(.....)

4.1. LIMITATIONS OF VOWEL HARMONY RULE

The traditional vowel harmony rule is as stated in the above section. It should be noted here that there are two instances of 'inability-to-apply'(ita) caveat in the 'applicative' and 'reversive' derivational processes in the traditional analyses. Of these, only the case of the 'reversive' has been mentioned by some Bantu linguists such as Doke(1943). See also Lodhi(1985:4) for a summary of Doke's distinctions. We do not share, however, the analyses given to the 'ita' caveat by these grammarians. They believe that what takes place as a result of the 'inability-to-apply' caveat in the 'reversive' is simply "a marked shift in the rule of vowel harmony i.e. the root-vowel -e is grouped with the vowels -a, -i and -u, and not with -o; thus it harmonises with the vowel -u of the Reversive post-radical instead of -o."(Lodhi(1985:4), cf. Reversive rule supra).

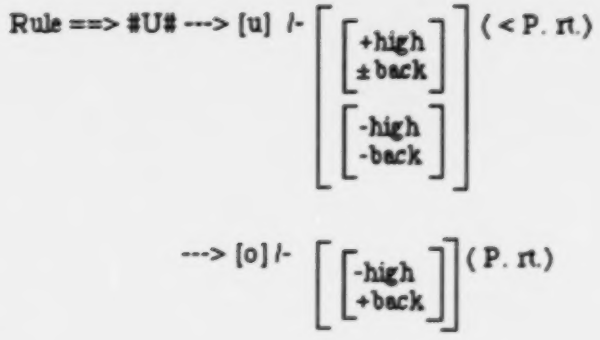
The 'inability-to-apply' caveat occurs under (Ai), (Bi) and (Bii) above. In (Ai) and (Bi), we notice that the vowel /a/ in the root(or to the right of the derivation) is a LOW vowel, but the affix is realised as a HIGH front vowel /i/(in Ai) or a HIGH back vowel /u/(in Bi). We would, normally, expect that the quality of the vowel in the affix would be either another low vowel or, at least, a mid vowel, since [a + i] and [a + u] often become mid vowels [e] and [o] in several environments. However, even though we never find *tandea or even *tandaa for 'applicative' or *fyatoa or even *fyataa for 'reversive' in the whole of Kiswahili antecedent usage this does not imply that /a/ harmonizes with /i/ or /u/ or both. The incompatibility of /a/ within the rules of traditional grammar has never, as far as we know, been referred to by scholars. We need to look at this critically rather than ignore it.

Let us look at the 'ita' caveat in the 'reversive'. We observe here that the quality of the vowel in the root is that of a 'MID' vowel and the rule of harmony in general Kiswahili phonology would normally produce either /e/ or /o/ as the affix segment. However, in 'reversive' modification, only /o/ in the root produces the correct sound change, hence 'shona'(sew) becomes 'shonoa'. We do not get *rembea or *remboa in all of Kiswahili antecedent usage. What we get is, in fact, a HIGH back vowel /u/. This means that we need a rule to account for this 'deviance' instead of glossing over it by grouping the 'deviant' form with those which appear to conform to sound law in the general phonology. The result is, in fact , revealing if not suprising.

4.2. A NEW RULE OF VOWEL HARMONY

We propose below a rule based on feature specifications as the solution to the problems which have arisen in Kiswahili due to the existing approach to the description of vowel harmony in p-item derivations. We shall first tackle the so-called limitations in the 'reversive' derivation above and take off from there.

1. Reversive Harmony Ruled Revisited



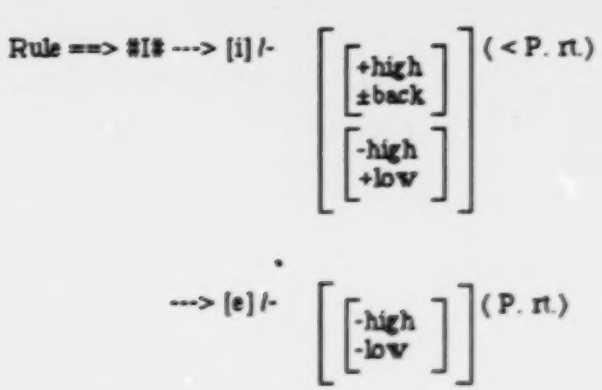
The new 'reversive' harmony rule stipulates that when the derivational affix(d-affix) #U# occurs in the environment of a root or stem which contains /i/ or /u/, or both, then the affix is realised as /u/ in the p-item. Similarly, if the root or stem contains the vowel /e/ or /a/, or both, then the d-affix becomes /u/. Finally, the d-affix becomes /o/ if the vowel in the root/stem is also /o/. This new rule reveals facts about Kiswahili sound law and harmony which the traditional rules cannot do. We discover that in the 'reversive' derivational process, the vocalics /i, u/ are subject to one identical rule of harmony in the realisation of #U# as /u/. In the same way, /e, a/ are subject to one identical rule in the derivation of #U# as /u/. Furthermore, /i, u/ differ from /e, a/ in the rules which produce /u/. From the foregoing, we can see that :

r.a) The traditional rule which says that /i, u, a/ are subject to the same rule is not correct in the least. The vowel /a/ is not subject to the same phonological rule as /i, u/.

r.b) The traditional rule which stipulates 'a marked shift in the rule of vowel harmony' with /e/ moving to join /i, u, a/ is also incorrect because it is based on a mistaken premise about harmony in Kiswahili. In fact, the occurrence of /e/ with /a/ but not with the pair /i, u/ is the natural rule of vowel harmony in Kiswahili in so far as the d-affix #U# is concerned.

We can test the accuracy and correctness of our claim by looking at the only other d-affix in Kiswahili which is a vocalic segment. This is the 'applicative' #I#.

2. Applicative Harmony Rule Revisited



The new 'applicative' harmony rule says that whenever the vowel in the root/stem is one of /i, u/ or both, then the d-affix #I# is realised as /i/ in the predicate item. In a similar vein, if the vocalic is /a/ in the root, then #I# becomes /i/. Lastly, the d-affix becomes /e/ if the vowel in the root/stem is one of /e, o/ or both. We might also add the features [-low], [-back], and [±back] in that order to the relevant features already specified to give greater explicitness to the analysis. It should, however, be noted that redundancy appears to set in rather than economy of description. For example, [-low] is redundant when added to [+high, ±back] since [-low] is always [+front] in Kiswahili. In the same manner, [+low] is always [-back] and so the later is redundant; and lastly, mid vowels are [±back] and so this latter is also a redundant feature. The 'applicative' harmony rule looks similar to the traditional formulation but the differences are significant. Firstly, we notice that, as with the 'reversive', the vowel segments /i, u/ are subject to the same derivational rule but /a/ is not subject to that rule. In this regard, the sub-rule (r.a) under 'reversive' has been proved as 'true', linguistic empirically. Secondly, we notice that when the vowel in the root/stem is one of /e, o/, or both, the quality of the vowel of the affix changes to /e/. However, we can see clearly that this rule is distinct from that which pertains to the 'reversive' d-affix. The d-affixes are conditioned, therefore, by 'vowel particular' rules. This diagnosis goes to confirm the statement in the sub-rule (r.b) above, linguistic empirically. The rules postulated above are much more closely related than it would appear at first observation. This is demonstrated below.

4.2.1. Symmetry, Parallelism, and Neutralism in Harmony Rules

The new rules presented above exhibit three extremes of harmony which we call Symmetry, Parallelism, and Neutralism.

i) Symmetry.

From the harmony rules a following linguistic empirical generalizations. Each d-morpheme or morphophoneme in our rules has one of the feature specifications below:-

a) $\begin{bmatrix} \pm high \\ +back \end{bmatrix}$ or b) $\begin{bmatrix} \pm high \\ +front \end{bmatrix}$

Under (a), the d-morpheme or morphophoneme is #U# or #O#. Whenever the d-morpheme has the specified vocalic qualities, the vowel in any bisyllabic root becomes either (i) /i/ or /u/ and this produces, inter alia, a symmetry with the d-affix in the pattern **high** front vowel in root versus **high** back vowel in d-affix, and **high** back vowel in root versus **high** back vowel in d-affix; or (ii) /o/ i.e. **mid** back versus **mid** back vowels only in root and d-affix. The case of (a.ii) is a case of total symmetry, i.e. the sound(s) in the root, whether bisyllabic or polysyllabic, must be of the same quality as the one in the d-affix and vice-versa. Other interrelations such as high front/high front or high back/high front combinations are not allowed by our specifications. Under (b), the d-morpheme or morphophoneme is #I# or #E#. Here again, when the d-morpheme has any of the specified vocalic features, then, the vowel in any bisyllabic root is either i) /i/ or /u/ and this gives a symmetry of **high** back vowel in root versus **high** front vowel in d-affix, and **high** front vowel in root versus **high** front vowel in d-affix similar to (a) or ii) /e/ or /o/. The latter, (b.ii), produces a symmetrical relationship of **mid** back vowel in root vrs. **mid** front vowel in d-affix or **mid** front vowel in root vrs **mid** front in d-affix. Note, however, that mid front/mid back relations are barred by our specifications. We notice in the symmetrical relationship between roots and d-affix that there is no total symmetry elsewhere apart from that mentioned above in (a.ii). In all other relations, what may appear as total symmetry, e.g. high front/high front in root and d-affix, are accidental symmetries since it is not obligatory that only such a harmony should occur in the phonology of a words since we do find high back/high front also in words.

It should also be noted that tri and polysyallabic items allow for more sound variations in relation to that in the d-affix. In such cases, the last vowel in the root, if it is distinct in quality from the preceding vowels, determines the sound quality of the d-affix. This is especially true of roots of foreign origin, whether bisyllabic or polysyllabic. Let us call the phenomenon '**Analogical Sound Harmony**'. The bantu derived p-item 'pepetua'(also 'popotoa') meaning 'wrench, twist, strain etc'.(cf. Johnson(1939:375, 385) illustrates the principle proposed. The last vowel in the root is /u/ [+high, +back], while the preceding ones are mid vowels.

[pepet<u>u</u>] root +[#I#] d-affixes [+a]]] > pepetulia(wrench off, from)

In this way, the rules of harmony are preserved at the expense of symmetry. This aspect of polyvalency harmony has not been described in Kiswahili as far as we know. We can see here that cases like 'pepetulia' which fall outside the above rules, which deal with univalent and close-valent vowels /i, u/, and /e,o] and [a] in roots, are rule-governed.

We have limited ourselves to bisyllabic derived p-stems and the vowels in bisyllabic derived stems pattern as follows as described above:

a.i) [±high, +back] ==> ## i--u ## or ## u--u ## e.g f <u>i</u>ch<u>u</u>a(reveal), p<u>u</u>ng<u>u</u>a
#U# (reduce)

a.ii) [±high, +back] ==> ## o--o ## e.g sọ ngọa(wring), chọmọa(extract)
#U#

b.i) [±high, +front] ==> ## u--i ## or ## i--i ## e.g. ch ụịa(drain out), pịkịa (cook for)
#I#

b.ii) [±high, +front] ==> ## o--e ## or ## e--e ## e.g. sọ mẹa(read about), s ẹmẹa(speak of).
#I#

In their actual details, the patterns show both symmetry and asymmetry in the relationship between vowel morphemes and vowels in the roots/stems. This is not significant here.

We wish to assert categorically now that, in the vowel harmony of close valent bisyllabic and univalent polysyllabic p-item derivations, symmetry occurs if, and only if, the quality of the vowel of the d-affix morpheme reflects the Tongue Height(T.H) of the vowels in the alignment. Or to put it another way, if two(or more) vowels have different Lip Positions(L.P) but share T.H in common with the vowel of a d-affix, then they are symmetrical in relation to the d-affix. The d-affix becomes a high vowel(front or back) if the vowel in the root/stem is also a high vowel and vice-versa. Likewise, the d-affix becomes a mid vowel if the vowel in the root/stem is a mid vowel and vice-versa.This feature does not take place in parallelism and neutralism.

ii) Parallelism.

Parallel alignment takes place if two(or more) vowels share the same L.P with a d-affix(not the morphophonemic form) but not the same T.H. In the rules, #I# --> /i/ under 'applicative' harmony. It shares the feature [+front] with /e/ and /a/ as well as lip rounding i.e. they are all [-rounded]. The /i/ is a high vowel but /e/ and /a/ are not. Furthermore, /e/ is a mid vowel while /a/ is a low vowel. The following patterns have been noted in bisyllabic derived stems:

biii) [±high, + back] ==> ## e--u## or ## a--u## e.g. p ẹkụa(investigate), pak ụa(dish up).
#U#

Note that, here, the pattern *## u--u ## does not occur. We have found parallelism only under the 'reversive' in bisyllabics, for the present at least. However, parallelism is found with the 'applicative' as well in some polysyllabics such as 'papasa'(grope),

papas+# I#+a > papasị a(grope about with).

iii) Neutralism.

When a vowel in a root/stem 'u
with or triggers a particular vowel quality of a d-affix morpheme, we say that it is neutral, even if total symmetry or parallelism also takes place simultaneously. This means that the vowel in the root/stem exhibits neutralism by not being covered by the same rule as for other vocalic segments in roots/stems or in the phonological system. For example, in the 'reversive', the vocalic /o/ in the root is neutral(i.e. unique) according to the rules which relate it to the d- affix, and also has symmetry with the d-affix at the same time. On

the other hand, each of the vowels within the groups /i, u/ and /e, a/ respectively share common features of the group. In the same manner, we find that in the 'applicative', the vocalic /a/ exhibits neutralism(i.e. uniqueness) in relation to the rules which connect it with the d-affix, (even though there is no symmetry here, there is parallelism), while the vocalics within each of the pairs /i, u/ and /e, o/ share common features. We wish, therefore, to state as a fact that in the rule of vowel harmony, based on the 'applicative' and the 'reversive' above, at least one vowel segment is always neutral. This is a generalisation which the traditional methods and descriptions have not captured or stated. With further reference to the 'applicative' and 'reversive', it should be noted that the vowels /a/ and /o/ are, ceteris paribus, 'paradigmatically' parallel. This means that there is nothing like neutral alignment in Kiswahili and indeed any language, except in cross rule comparisons such as 'applicative' versus 'reversive'.

We conclude this section by observing that the most general and predictable rules in Kiswahili derivational morphology, it appears, are those which relate /i, u/ to #I# or #U#. Furthermore, the use of feature specifications reveals the underlying sound harmony in the vowel system of p-item derivations in Kiswahili and this is a more accurate and richer reflection of the choices made by the speakers of Kiswahili within the phonology of the language than is presently stated anywhere in Kiswahili grammatical descriptions. We can see, in our new rules, the kind of phonological competence which underlies the grammar of the 'native' speakers. Finally, we have eliminated 'pseudo-harmonies' from the scientific analyses of Kiswahili vowel harmony in p-item derivations.

Another linguistic empirical rule is that, in polysyllabic items, vowel sounds which separately trigger the same or identical vowel change in a d-affix will always trigger the same or identical sound change together(irrespective of their combinations) if they occur as the sole vowel constituents of a word root or stem. In the 'applicative', for example, any distribution of [i, u, a] or [e, o] respectively in a word root or stem will result in the d-affix becoming either [i] or [e]. A distribution [e, u] for instance will trigger 'analogical harmony' as in 'pepetulia', since the vowels separately trigger un-identical sounds, and not 'valency harmony' as above.

5.0. OCCURRENCE OF P-ROOTS AND D-AFFIXES

ALL p-item roots, according to our observations, cannot occur with the full range of the 'derivational' affixes. Many base roots can, however, take at least five to six of the affixes. One of the most remarkable p-items, and one often cited, is the base FUNG(close) which gives us a root {fung}. Before we give an illustration with this p-root, it should be observed that the bulk of Kiswahili p-items end with an indicative inflexional affix #a# whether they are considered as derived or simple(basic) predicate items. We use the symbol (+a) to indicate the p-final inflexion.This also covers its allomorphs [i] and [e]. Here is a sample of the modifying affixes with the root #fung#:-

0	1	2	3	4	5
fung+a(close) (tie, close)	fungi+a (tie with)	fungw+a (be tied)	fungik+a (be tied)	fungish+a (cause to be tied)	fungu+a (untie)

6	7	8	9
fungam+a (be in a tied state)	?fungat+a (unite, be united)	fungan+a (tie together, be interwoven)	*fung?p+a

Let us compare the pattern of #fung# with another p-base CHOM(pierce) whose root is #chom# or [tSom]

0	1	2	3	4	5
chom+a (pierce)	chome+a (pierce with)	chomw+a (be pierced)	chomek+a (be pierce)	chomesh+a (cause to pierce)	chomo+a (pull out, extract)

6	7	8	9
*chomam+a	*chomat+a	choman+a (pierce one another, together)	*chom?p+a

The asterisked forms are those which do not commonly occur with the majority of p-roots. Some significant observations can be made about the d-affixes #p#(no.9), #am# / #at#(nos. 6 & 7) and #an#(no. 8).

5.0.1. **The Affix #p#**

The affix #p#(no.9) was and is not a p-base derivational affix hence the absence of any attested predicate base form in Kiswahili. This goes to buttress the suggestion that we need to make a distinction between 'predicatization' and 'modification' in the description of the language. The d-affix #p# illustrates the process of predicatization par excellence in Kiswahili. The affix #p# is used exclusively to transform lexical items of other categories, mostly adjectives, into predicate items. It never, and can perhaps never do so, modifies any existing predicate category item, be this a base-root or a stem(lexical item). Examples of the function of #p# are:

Adjective Root	Predicatization	P-Item
oga (coward)	oga+#p# >	ogop+a (be cowered, fear)
ongo (false)	ongo+#p# >	ongop+a (tell falsehoods)
kari (harsh)	kari+#p# >	karip+a (scold, speak harshly to s.o.)

Note here the interesting sound change in the derivation of 'ogopa' where /a/ > /o/ /- #p#. This sound change is phonologically motivated. It is not the result of the morpheme but of Kiswahili syllable structure, namely, the stress pattern specifically(cf. Tucker and Ashton(1942)).

5.0.2. **The Affixes #am# and #at#**

Another significant observation is that the d-affixes #am# and #at# never occur in the same root, i.e. they may be viewed as somehow in 'complementary distribution' to each other in most p-items today. The exceptions, it seems, are found in derivations of FUNG, ANG, TUNG as in,

fung+am+a > fungama(be stuck) fung+at+a > fungata(be joined)
ang+am+a > angama(be suspended) ang+at+a > angata(carry on shoulder)
tung+am+a > tungama(congeal) tung+at+a > tungata(carry on shouder)

This feature of incompatibility between #am# and #at# in same p-roots may, in our view, be due to synchronic factors. We are certain about this because the pattern in FUNG, ANG, and TUNG show that these forms were probably common in protoBantu. For example, 'fungata' was, until fairly recently , accepted usage in Kiswahili(and could, probably, still be found in some usages). But #at# has become almost extant in this p-item and is hardly ever heard. However, we have in active use the 'causative' fungasha . The underlying form of this is as follows:

0+7+4
fung+at+j+a >>fungasha(cause to be united or tied to something, usually to something/someone in front. Also, tow such object).

Rule ==> /t/ + /j/ > /ʃ/

Further evidence for /fungat/ can be seen in the lexical n 'fungate'(a period of seven days which follows a wedding, a honeymoon).The noun fungate is formed by a process of nominal derivation from p-roots and stems(i.e. root + p-der. affix(es)) by the addition of a nominal affix which in this case is a vowel /e/.

P-stem ==> /fungat/ + Nom-affix==> /e/ -----> /fungate/

One cannot speculate too much about what caused the disappearance of #at# with /fung/ in current usage. We suggest, however, that the connotative mean of sexual activity(lit: being joined together to consume a marriage) which is the prime purpose of the honeymoon celebrations, at least among the Waswahili, may have become socially a taboo to talk about unidiomatically so that the p-item which conjures up images of the associated act gradually fell out of use and the d-affix disappeared with the lexical item.

Other scholars may have their own interpretation of the pragmatic causes of the absence of the d-morpheme from this p-item. The one linguistic consequence of this is that we have few situations in the p-item derivational system where #at# and #am# occur with the same root in Kiswahili today. Examples of incompatibility are:

#at#	*#am#
fumbat+a >fumbata(clasp with hands)	*fumbam+a >
kumbat+a >kumbata(embrace)	*kumbam+a >
sokot+a > sokota(twist)	*sokom+a >
kokot+a >kokota(pick up)	*kokom+a >
kamat+a >kamata(catch)	*kamam+a >

#am#	*#at#
ungam+a >ungama(be in joined state)	*ungat+a >
ficham+a>fichama(be in hidden state)	*fichat+a >
andam+a >andama(be in arrayed state)	*andat+a >

The lack of compatibility between #am# and #at# in most p-roots in the language today is worth highlighting. It signifies a loss in the richness of the derivational system of Kiswahili, at least in practical usage and grammatical generalization. However, we think that the fact that traces of #at# remain in the derivation of other d-affixes, as we have shown with 'fungasha', means that #at# can be retrieved from some underlying structures of p-items. We, therefore, conclude that the present incompatibility restriction on the occurrence of #am# and #at# is a surface structure constraint rather than an underlying structure constraint.

We wish to claim further from the foregoing that the real structure of derived p-items(i.e. modified forms) are grounded in the underlying structures of p-items rather than in their surface forms. Upon this assumption, we claim further that the kind of argument and thematic structures that are generated in the surface strings of predications(sentences) containing derived p-items are determined by the underlying source of the d-affixes.

5.0.3. **The Affix #an#**

The modifying affix #an# has been referred to as the 'reciprocal' or 'associative' derivational affix in Kiswahili and Bantu languages(cf. Ashton(1944, 1947:240-242), Haddon(1955:157-160), Polome(1967:91), Whiteley(1968)). Examples of this form are:

#an#	
pigan+a >pigana(hit each other)	onan+a >onana(see each other)
choman+a >chomana(pierce each other)	fungan+a >fungana(tie each other)

Unfortunately, we do not think this analysis of #an# as a reciprocal or associative is correct. This is because we have, in Kiswahili, predications of the following types which, in our view, must have a common D-structure in so far as the d-affix #an# is common to them.

1) mtoto anapigana na mpishi(the boy is fighting with the cook)
2) mtoto na mpishi wanapigana(the boy and the cook are fighting each other)
3) chakula kinapatikana sokoni(food can be got in the market)
4) Hapana neno lililofichamana na Mwenyiezi Mungu(There is nothing which is hidden from Almighty God) cf. Ashton(1944:237)

Out of our examples, only (2) is clearly reciprocal, while reciprocity is not even implied in the rest. While it might be claimed that association is implied in (1) and (3), it is difficult to see how association or associativeness is implied in (3) and(4). However, in all these examples, the d-affix #an# features prominently.

Our observation is that, it seems odd for the same d-affix to function so differently in predications and to lose altogether its meaning when it follows other d-affixes as in (3) and (4). More serious, syntactically, is the fact that the same underlying act occurs in (1) and (2) and yet different descriptions are given to them implying that they have different underlying structures. Thus (1) is often regarded as an associative rather than a reciprocal simply because the prepositional item 'na' of Association occurs in the predication. Even where the same term 'reciprocal' is used for both, we are not told how #an# in (1) is related to #an# in (2) since the d-affix remains the same.

We wish to suggest here that #an# is NOT morphologically a reciprocal morpheme since the underlying structure and meaning of #an#, as with its function, must be constant and remain constant in every predication or sentence. 'Reciprocal' is a contextual function which is not inherent in #an#. It is brought about by changes in the thematic function of NPs in the predication and/or the position of the nouns which function as arguments of the predications. This is especially true of (1) and (2) where (2) is derived syntactically from (1) by syntactic transformation and so reciprocal is, 'a fortiori', solely the result of the transformation or syntactic 'derivation' of (2) from (1). We shall provide a more detailed account of the syntactic patterns in which #an# occurs in the near future. For the present, it seems clear that the claim that #an# is a reciprocal morpheme in Kiswahili and perhaps other Bantu languages is a myth.

6.0. CONCLUSION

This work has endeavoured to show in what new directions a study of p-item derivational affixes may be undertaken. We have shown that there is a need to distinguish predicatization from modification when discussing derivation of predicate items in Kiswahili. We have, furthermore, shown how the rules of vowel harmony in the derivational system are inadequate, as they stand, since they wrongly assign sound change where there is no change and vowel harmony where there is no harmony. We have provided a new rule of vowel sound harmony which is long overdue. We

have also drawn attention to the fact that the occurrence of base forms, p-roots and the d-affixes is subject to some restrictions. For example, #am# and #at# rarely occur with the same predicate root. This may be a performance level constraint rather than a competence level restriction. Further investigation of these aspects is required. The most radical suggestion is that #an# is not a reciprocal morpheme. Reciprocity is a property of the function of the NP constituents of the predication/sentence and not of #an#.

More fundamentally, we are suggesting radically that in Bantu p-items, derivational affixes or markers are subject to underlying morpho-syntactic and phonological constraints which alone enable the analyst to isolate the actual underlying forms, types, and their actual realisations in antecedent usage as well as their functional roles in the word in Bantu and in Kiswahili in particular. The kind of thematic and argument roles engendered by the use of any d-affix depends crucially on our understanding of these underlying morph-syntactic and phonological functions of d-affixes.

It remains to be seen whether the rules of vowel harmony are generalizable to other aspects of Kiswahili grammar or whether they are context specific('applicative' and 'reversive' only). If they are general rules, then they might well occur in other languages of the world also. Furthermore, having shown that the primary function of #an# is not that of reciprocal, we need to go further to show what the underlying morphemic function and meaning of #an# really are.

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Dagaare Syntax: A Two-Level X-Bar Account*

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0. Introduction

This paper presents a formal analysis of aspects of the morpho-syntactic structure of Dagaare and related languages within the framework of the GB theory of generative grammar, using the version that is known as the two-level X-bar system (Hellan 1991).

The Dagaare language is spoken in Northwestern Ghana and adjoining parts of Burkina Faso by about a million people. Genetically, it belongs to the Western Oti-Volta (or what I call the Mabia[1]) subgroup of the Gur languages together with others such as Dagbane, Gurenne, Kusaal, Mampruli and Moore.

There exists no comprehensive publication on the syntax of Mabia and other Gur languages (Naden 1989). This fact may indicate that the structure of these languages has hardly been much interpreted in the framework of current generative grammatical theories, especially that of the Chomskyian tradition. This is a challenge that is taken up in this paper. In our formal account, we shall concentrate on only the canonical declarative sentence, especially the Verb Phase.

The paper is divided into three major sections. In section 1.0, we describe the morphological and the syntactic facts of the nominal phrase briefly. In section 2.0, our description of the general structure of the Mabia sentence focuses on the verb phrase. This is done with particular reference to data from Dagaare. Section 3.0 contains our proposal for a formalisation of some of the construction types in this language group.

1. 0 Mabia Morpho-Syntactic Structure.

Most of the earlier descriptions (e.g. Bendor-Samuel 1971, Naden 1988) of the canonical simple declarative sentence in this group recognise the following sequence: A nominal phrase usually precedes the verb phrase,

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* This paper is a slightly modified version of chapter 1 of Bodomo (1993).

[1] This term is built out of the lexical items: 'ma' (translated as 'mother') and 'bia'/ 'bie' / 'biiga' (translated as 'child'). These lexical items are more or less similar across most of these languages. 'Mabia' , then , is understood as denoting sibling or fraternal relationship in these languages. An explanation for the use of this term as a (better) cover name to designate these languages, instéad of a term such as 'Western Oti-Volta', is given in Bodomo (1993).

functioning as the subject of the sentence. Another nominal phrase follows the verb phrase functioning as the object, in the case of transitive verbs.

This sequence suggests that, in terms of word order parameter, these languages are basically SVO in their syntactic structure. Of course, as we shall see later, nominal suffixes, verbal particles and adverbial phrases make the basic structure more complex than it looks at first. The following sentences in (1) from Dagaare, Dagbane, Gurenne, Kusaal, Mampruli and Moore will illustrate this basic structure.

(1a) *Dɛrɪ nyu la kʊɔ* : Dagaare
S V O
Dery drink a.m.[2] water
'Dery drank water'

(1b) *Nindoo ŋmɛ la Nimpaga* : Dagbane
S V O
Nindoo beat a.m. Nimpaga
'Nindoo beat Nimpaga'

(1c) *Aduku yin ŋmi ma* : Gurenne
S V O
Aduku fut beat me
'Aduku will beat me'

(1d) *Seidu yiis kugra* : Kusaal
S V O
Seidu remove stone+a.m
'Seidu removed the stone'

(1e) *Wuni piisi la taama* : Mampruli
S V O
Wuni pick a.m. sheafruits
'Wuni picked sheafruits'

(1f) *Wirdaogo paba la mi* : Moore
S V O
Wirdaogo beat a.m. me
'Wirdaogo beat me'

After confirming this basic word order, Bendor-Samuel (ibid) lists some of the clause types that may occur in these languages as intransitive, transitive, ditransitive, directive, stative, equative, demonstrative etc. Naden

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[2] The particle, *la* , glossed as 'a.m.' (affirmative marker) or its alternants seem(s) to be obligatory in all affirmative declarative sentences, at least, for Dagaare.

(ibid) on his part indicates the types of sentences that may occur in the languages by looking at the kind of functions that sentences of a language may perform. In the process he lists a lot of sentences as evoking event, patient, benefactive, state etc.

We shall not attempt to spell out all these sentence types. What we intend to show here is that a more constraining way of looking at the structure and types of sentences in Mabia is to look at the argument structure and the inherent semantic properties of each of the verbs taking part in the sentence, with this basic word order parameter in mind. This will be demonstrated more substantially with the sentence structure in Dagaare in section 3.0, but the two examples here will illustrate the point already.

(2) *O ŋmɛ ma la*
S/he beat me a.m.
'S/he has beaten me'

(3) *O kù ma lá gan*
S/he gave me a.m book
'S/he has given me a book'

By the nature of the verb 'beat' in (2) we have a transitive sentence because the verb's argument structure, as shown in (4), is basically transitive,

(4) ŋmɛ, V:agent, patient.

taking the two arguments 's/he' and 'me'. At the same time, the semantic nature of the verb tells us that the direct object of 'beat' is the patient of the sentence, thereby making the sentence perform a patient role as Naden would want to have it.

In the same way the argument structure of the verb 'give' from the lexicon, represented in (5), tells us that it is a triadic or a ditransitive verb.

(5) kù, V: agent, theme, benefactive.

As a result our sentence will be ditransitive. Also by its semantic nature we get the indirect object 'me' as the benefactor of the action of giving.

By the foregoing explanation, rather than listing a myriad of sentences to illustrate the various types we simplify issues by recognising the fact that sentence types are the projection into the syntactic level of the argument structure and semantic properties of the individual verbs participating in the constructions. This is in line with the Projection Principle as posited in Chomsky (1981). We shall come back to these issues of formalisation but for now let us present the facts of the nominal and verbal phrases in Mabia, in general, and Dagaare, in particular.

1.1. The Noun Phrase in Mabia

Two issues are important in talking about the Mabia noun phrase:
a) the structural positions in which the elements forming this phrase occur (i.e. the syntax of the noun phrase) and
b) the nominal class systems in these languages (i.e. the morphology of the noun phrase).

We shall consider, first, the noun phrase structure.

1.2. Noun phrase structure

According to Bendor-Samuel (1971), the Gur noun phrase structure is quite simple, consisting either of a noun followed by a numeral or a noun followed by an demonstrative but rarely of a noun followed by an adjective and never a noun followed by a string of adjectives. He says little about items that precede, mentioning only that possessive pronouns precede the noun.

Angkaaraba (1980) however gives a much more comprehensive structure of the Dagaare noun phrase, suggesting that the noun phrase structure in this language group may be much more complex than that thought by Bendor-Samuel (ibid). The diagram below in (8) shows the complexity of the Dagaare noun phrase. According to this diagram the head noun can be followed by adjectives, quantifiers, demonstratives, intensifiers and locative markers. On the other hand, it can be preceded by modifiers, another noun phrase and articles. Indeed, contrary to Bendor-Samuel's observation that Gur languages never exhibit a string of adjectives after the head noun, this actually happens in Dagaare according to this study. The following construction (6) from Angkaaraba (ibid) illustrates this and all the other structures in the diagram:

(6)

A n bie nga sukuuli gan bil zi wog sʊnnɪ ata ama zaa paa pʊɔ
the my child this school book small red long good-prural three these all intensifier among
'Among all these three small red long good school books of this my child'

'Gan' is the head noun. It is followed by as many as four adjectives. In fact there is no motivation why Angkaaraba (ibid) sets only a maximum of four adjectives to follow the head; we can have more than that as shown below in (7).

(7) a gan bil zi wog baal sʊnnɪ na
the book small red long slender good+pl those
'Those small, red, long, slender, good books'

(8)

6	4	2	0	1	2				3	4	6	7	8		10
					.2	.4	.6	.8					.2	.4	
Art	np	nm	NH	(pl)	Adj	Adj	Adj	Adj	(pl)	Q	D	(pl)	int	int	loc

Key: Art - Article; np - nominal phrase; nm- noun modifier; NH; Noun Head; pl - prural; Adj - Adjective; Q - Quantifier; D - Demonstrative; int - intensifier; loc - locative.
Even numbers show slots where major constituents of the nominal phrase occur while odd numbers indicate affixes of the preceding item.

Of course the argument about whether strings of adjectives can or can never follow a noun head in Mabia is partly also an argument about whether we consider nouns and adjectives to form one or more than one word. This issue can be clarified when we look at the following data from Dagaare and Mampruli in (9) and (10) respectively.

(9a) *yiri , yie ; zɪɛ ; kpoŋ*
house , houses ; red , big
but
(9b) *yizɪɛ*
house+red
'red house'
(9c) *yizɪɪrɪ*
house+red+pl
'red houses'
(9d) *yizɪkpoŋ*
house+red+big
'Red big house'
(9d) *yizikponni*
house+red+big+pl
'Red big houses'

(10a) *gbaŋŋu ; bila ; gyia*
book ; small ; red
but
(10b) *gbaŋbiligyia*
book+small+red
'small red book'

(10c) *gbaŋbiligyɪɪsɪ*
book+small+red+pl
'small red books'

In both Dagaare and Mampruli, as can be seen from the data, only the stem of the noun is available when the noun takes on one or more adjectives. Indeed adjectives also lose part of their endings when they combine with a following adjective. The noun and adjective(s) can be seen as forming one word. This observation is buttressed by the fact that the plural of the whole complex appears at the end of the last adjective.

Looking at these constructions in Dagaare and Mampruli as single words would probably be the only way to defend Bendor-Samuel's assertion that a noun (word) is never followed by a string of adjectives (as separate words ?) in Gur.

Even then the data do not dispute the fact that a noun or its stem is followed by adjectives or adjectival stems. The data from Dagaare and Mampruli therefore confirm the fact that the structure of the nominal phrase in Mabia is much more complex than observed by earlier works.

1.3. Noun class system

Another important aspect of the nominal phrase in Mabia and indeed the whole of the Gur language family is the occurrence of a system of noun classes. In some languages nouns can be put into classes depending on the way they form the singular and plural forms of nouns. In other languages the noun classes are set up based on a system of concord operating between the nouns and any substituting pronouns, numerals and other quantifiers (Bendor-Samuel 1971). In many languages, however, the two criteria are congruous, thereby giving a straightforward classification.

Naden (1988) illustrates this agreement system between nouns and their complements and specifiers in some of the Gur languages. Gurenne exhibits the most developed form of this system of concord. In this language, where six noun classes can be established, virtually all the six classes have unique third person singular and plural pronouns as follows in (11).

(11)

Class 1: a/ba e.g 'nɛra ayema' (one person) but 'nɛreba batan' (three people)

Class 2: de/a e.g 'yɛnɛ deyema' (one tooth) but 'yɛna atan' (three teeth)

Class 3:ka/se e.g 'zuna kayema' (one fly) but 'zununhe setan' (three flies)

Class 4: ko/to e.g 'vɔɔn koyema'(one leaf) but 'vɔntɔ totan' (three leaves)

Class 5: bo/- e.g 'daho boyema' (one "pito") but ???????

Class 6: bo/i e.g 'naho boyema' (one cow) but 'nii itan' (three cows)

These in most cases serve as the singular and plural markers of the nouns in that group. This regular system degenerates gradually from Mampruli down to Dagaare where we see it in its simplest form. Dagbane, for instance, has only two types of third person singular pronouns: '*o* ' for an animate noun and '*di* ' for an inanimate noun while Dagaare has only a two way distinction

for its third person plural pronouns: *'ba '* for humans and *'a '* for non-humans.

1.4. Noun class system in Dagaare:

From the above explanation, it will be noticed that because of the apparently degenerate way this class system manifests itself from language to language it is quite difficult to establish a system that will fit all the languages in the group. This problem is compounded by the fact mentioned earlier that the languages vary in their choice of criteria for establishing the class system.

There are, at least, two possible solutions to this problem. One is to attempt a historical reconstruction of the class concord system for the whole group. One such approach is Manessy (1978) which attempts to reconstruct a class system for proto-Central Gur which involves mostly the Mabia languages. Below in (12) is a simplified version of his class system. Singular affixes are to the left while plural affixes are to the right. As can be observed from (11) above, synchronic data from even Gurenne, which is the language with the most developed noun class system among the Mabia languages, do not fit into this classification.

(12)

Singular	Plural
o	ba (mba, ma)
ŋu, u fe/fu	i, yi
ka	se
de	a, ya
ke/ku	di/ni

This approach is not very feasible for our present purposes because of the apparent lack of diachronic linguistic data in these languages.

The other possible solution is to make attempts at establishing a class system in each of the languages based on synchronic linguistic material. This is the solution adopted here for Dagaare where we use data from the Central dialect (see Bodomo 1989 for a classification of dialects of the Dagaare language).

In Dagaare, as already stated, the only time the concord system manifests itself is the distinction between human versus the non-human concord markers: 'a/ba' for plural nouns. It would therefore appear inappropriate to use the concord criterion. This leaves us with only the singular/plural criterion. Based on an analysis of singular and plural forms of many nouns in the language we may tentatively arrive at eight noun classes for Dagaare. The table below in (13) displays the various classes with their respective singular and plural suffixes and some example nouns.

(13) Noun class system in Dagaare:

Class 1: E / rI	Singular: -E	Plural: -rI
	bie - child	biiri - children
	tiɛ - tree	tiiri - trees

Class 2:O/ bO	Singular: -O or a	Plural: -bO or ba
	pɔgɔ - woman/wife	pɔgbɔ - women/wives
	dɔɔ - man	dɔbɔ - men

Class 3: O/rI	Singular: O	Plural: rI
	duo - pig	dori - pigs
	dʊɔ - 'dawadawa'	dɔrɪ - 'dawadawas'
	nʊɔ - hen	nʊʊrɪ - hens
	kuo - rat	kuuri - rats

Class4:rU/rI	Singular: rU	Plural: rI
	pirʊ -sheep	piiri - sheep

Class 5: ϕ/rĪ	Singular: ϕ	Plural: rI
	nu - hand	nuuri - hands

Class 6: rI/E	Singular: rI	Plural: E
	tiri - spoon	tiɛ - spoons
	miri - rope	mie - ropes
	biri - seed	bie - seeds
	nimiri - eye	nimie - eyes
	piiri - rocks	pie - rocks

Cl. 7: -nv/nv	Singular: nasal(lised) syllable	Plural: nasal(lised) syllable
	kpaaŋʊ	kpinni
	kpiimɛ	kpiini
	gani	gama
	naa(g)ʊ	nĪĪ

Class 8: a/I	Singular: (la)a or (ra)a	Plural: (l)I or (r)I
	gbiŋgbilaa - drying spot	gbiŋgbilli - drying spots
	laŋgbaraa - long hook	laŋgbarri - long hooks
	pɔgsaraa - young girl	pɔgsaarri - young girls

The tentative nature of this table should be stressed. It is therefore possible that further analysis, especially in other dialects, may increase, decrease or even restructure the class system set up.

Having stressed the tentative nature of the table, this class categorisation still needs a brief explanation. The criterion used here is mainly morphological: we attempt to establish the *stem* forms of the nouns and their singular and plural *affixes* . For instance, in class one we can say that the stem forms for the nouns 'children' and 'trees' are 'bi-' and 'ti-' respectively. We will then need the singular affixes '-e' and '-ɛ' to form 'bie' and 'tiɛ'. This morphological explanation is however not enough. We need phonological explanations. Dagaare has a system of advanced tongue root (ATR) vowel harmony (Bodomo 1986). Stem vowels which are [+ATR] need similar suffix vowels and likewise [-ATR] stem vowels, thus explaining the differences between 'bie' and 'tiɛ'. Further, we need facts about vowel lengthening to explain how the plurals are formed. Besides establishing the 'suffix -rI' (the I means it is still unspecified for vowel harmony) we need to explain that the stem vowel in each case in class one must be lengthened to form the plural. We thus need both morphological and phonological (and even, in some cases, semantic) information to establish the various classes.

2. 0 The Verb Phrase.

The verb phrase in Mabia and other Gur languages is said to have the following general structure:

preverbal particles - the main verb - postverbal particle

We shall first discuss the preverbal particles. This will be followed by the structure of the main verb and the discussion on the verb phrase will end with the postverbal particle, where we will suggest that the particle that has been treated as postverbal is indeed preverbal at D-structure, appearing only as postverbal after movement rules. Before this, it will be useful to discuss the use of the term 'auxiliary verb' in the Mabia languages.

2.1. A note on the term AUX in Mabia .

Earlier linguists of the group (e.g. Bendor-Samuel 1971) report of 'auxiliary verbs' in some of the languages occurring between the preverbal particles and the main verb. In this work, we argue against the use of the term as there is a tendency to confuse the concept of auxiliary verbs as can be found in Indo-European languages and the phenomenon of verb serialisation where different lexical verbs may occur together without any being auxiliary to the other. My arguments are based on the fact that there exists a number of particles, as will be shown in section 2.2, which perform the temporal, modal

and aspectual functions normally performed by those verbs in the Indo-European languages called auxiliary verbs.

In fact, the lexicalisation strategies that are available in serialising languages for expressing conceptual properties such as tense, aspect, mood, and polarity are rather complex. On the one hand, in Indo-European languages like English, French and Norwegian most of the items that are described as auxiliary like *'to be ' 'to have '* and *'to be able to '* (English); *'etre ', 'avoir '* and *'pouvoir '* (French) and *'å være '* and *'å ha '* (Norwegian) are themselves lexical verbs, i.e. they can stand independently in a simple sentence and they can themselves inflect for tense and aspect.

On the other hand, the linguistic items in Dagaare and other Mabia languages that carry tense and aspect are not lexical verbs. They can never stand on their own behaving like *'to be'*, *'etre'* and *'å være'* as is the case in English, French and Norwegian respectively. They may therefore be auxiliaries but certainly not auxiliary verbs. Muysken (1981) has also observed this grammatical difference between Indo-European languages and Creoles such as Sranan, Saramaccan and Krio.

From all indications then the (auxiliary) particles that help verbs to express tense, aspect and mood in serialising languages are substantially different from the auxiliary verbs of Indo-European. And the best thing to do in any formal analysis of the verb phrase in these languages will be to assign them to a node of their own; one which will replace the AUX node as is often postulated for Indo-European languages.

2.2. *The preverbal particles.*

Many have recognised the presence of preverbal particles in the Mabia verb phrase, though not all may have realised the crucial functions they perform. Bendor-Samuel (1971) recognises that virtually all the Gur languages have these particles occurring optionally before the verb. He even lists as many as 30 such particles in Dagbane. Dong (1981), on his part, lists as many as 15 such particles for Dagaare. In the diagram below we try to list the major particles occurring in two of these languages, Dagbane and Dagaare, before we begin to discuss their temporal and aspectual functions.

(14)

Tense, Aspect, Modal Particles	Dagbane	Dagaare
today (also once upon a time)	dɸ	da
one day away	sa	zaa
two or more days away	daa	daar
habitual	yi	maŋ
still, not yet	na	naŋ
actually	siri	sʊrʊŋ
once again, as usual	yaa	yaa

suddenly, just	dii	dɪɛ
nonfuture negative	bɸ	ba
future affix	nɸ	na
future negative	ku	kʊŋ
imperative subjunctive negative	dɸ	ta
again	lah	là

Having now listed the particles we will look at their functions. One thing about these particles is that it is very difficult to separate them into temporal, aspectual, modality and polarity particles. Some of the particles as can be seen in (14) express, for instance, tense or time depth and polarity while others express mood and polarity. Dakubu (1989) has also recognised the same problem with respect to the particles of Dagaare.

2.2.1. Time depth and tense particles.

One difference between Mabia and Indo-European languages or even between them and the Kwa languages is their ability to express not just tense but also time depth by the use of these particles. The particles '*dɸ* ' and '*da* ' both express an action which has taken place within the last 24 hours i.e before yesterday in both Dagaare and Dagbane. There is, however, an additional meaning in Dagaare as it can also express an action that happened some time ago. This is illustrated in (15).

(15) *Kɔŋ da lee la*
Hunger past fall a.m
'There was famine some time ago'

In this sense it can be said to express the neutral past without marking the gradations mentioned.

The particles '*sa* ' and '*zaa* ' in Dagbane and Dagaare as can be seen above express events which took place a day away (and even in the case of Dagbane a day still to come, according to Bendor-Samuel ibid). The particles '*daa* ' and '*daar* ' express actions which took place two or more days ago but again in Dagbane it can also express an action still to take place two days from now. I shall discuss the rest of the tense particles under polarity below.

2.2.2. Polarity and tense particles.

Again the relationship between polarity and tense is so tight in these languages that one has single individual particles which can express a positive or negative action in the past and a positive or negative action in the future. The following Dagaare sentences in (16) illustrate the point.

(16a) *N da gaa la wɪɛ*

I past go a.m farm
'I went to the farm'

(16b) *N na gaa la wɪɛ*
I fut+pos go a.m farm
'I will go to the farm'

(16c) *N ba gaa wɪɛ*
I past+neg go farm
'I did not go to the farm'

(16d) *N kʊŋ gaa wɪɛ*
I fut+neg go farm
'I will not go to the farm'

The particle '*na* ', for instance, is not just a particle about future tense but is as much a particle about positivity of the action.

On the other hand, its counterpart in (c) which is '*kʊ*' is not simply negating an action, it is also indicating the tense (future in this case) in which the action is conceived of by the speaker.

2.2.3. Modality and Aspect particles.

Particles such as '*maŋ* ', '*dɪɛ* ', '*ta* ' , and '*la* ' as can be seen from the table above express modality, aspectual features and even some features of polarity as is the case with the imperative subjunctive negative marker '*ta* '.

2.2.4. Aspectual suffixes.

Apart from these particles there are also some 'suffixes' to the verb expressing perfective and imperfective aspects in these languages. Indeed with respect to these, the verb in Mabia has, at least, three forms as shown with the Dagaare verb '*to go home* ' below in (17):

(17a) *kul* - dictionary form
(17b) *kulee* - perfective aspect
(17c) *kulo* - imperfective aspect

From all the above, it can be seen that these particles and the affixes mentioned form a very cohesive structural and functional group and any formal representation ought to consider this cohesiveness and the possibility of their forming a functional projection. These will, in fact, be treated as independent 'functional heads' in the formalism to be suggested in section 3.

2.3. The Main verb.

As can be seen from the above two-tier inflectional morphology of the Dagaare verb '*to go home* ' , the basic system of the Mabia verb is often labelled as aspect - the perfective and imperfective aspect. It may also be called, according to Bendor-Samuel (1971) event and process, punctiliar and linear,

etc. In this basic system, the speaker sees the action as either completed or not yet completed. This is irrespective of whether the action is viewed as being in the past or not, as is shown in the following Dagaare sentences:

(18a) *O da kulee la*
S/he past go home+perf a.m
'S/he went home'

(18b) *O da kulo la*
S/he past go home+imperf. a.m
'S/he was going home'

(18c) *O kulo la*
S/he go home+imperf. a.m
'S/he is going home'

In languages like Dagbane and Mampruli there is, in addition to this basic inflectional system, another inflectional positive imperative suffix '*-ma* ' added to the verb. This is illustrated in (19a):

(19a) *Isima*
Get up+imp
'Get up'

(19b) *O isiya*
S/he get up a.m

(19c) *O kyamya*
S/he walk+a.m
'S/he has gone'

(19d) *O kyɛŋɛŋ* : Dagaare
S/he walk+a.m
'S/he has walked'

Further still there are other verbal suffixes, '*-ya* ' in Dagbane and Mampruli and '*-ŋ* ' in Dagaare, which serve to affirm or emphasise the verbal action. This is also shown above in (19b - d). In Dagaare and, possibly, in Mampruli and Dagbane these affirmative affixes are in complementary distribution with the so-called postverbal '*lá* ' which will be discussed in the next section.

An interesting aspect of the Mabia verbal system is that verbs can be classified into pairs or even several classes of oppositions depending on derivational processes such as causativity, transitivity, reversivity and many others. The table below in (20) is an attempt to illustrate this with a number of Dagaare verbs :

(20)

1	kʊ - kill	kpi - die
2	lɔɔ - make fall	le - fall
3	gaali - put to sleep	gaŋi - sleep
4	zigli - seat	ziŋi - sit
5	tuuli - make drink	nyu - drink
6	su - feed (put in mouth)	di - eat
7	siŋi - cause to wake up	iri - wake up (from sleep)
8	yagli - hang	yagi - take off
9	vɔgli - put on (hat)	vɔgi - remove(hat)
10	ûû - bury	ûnni - exhume
11	leŋ - tie	lori - untie
12	nyogli - hold loosely	nyɔgi - hold
13	sɔgli - to hide	sɔɔ - to be black
14	yieli - sing, say repeatedly	yeli - say, speak

The pairs of oppositions from 1 up to 7 seem to illustrate causativity oppositions with the members to the left being the causatives. This opposition proves to be important for verb serialisation in terms of predicate constraints.

While illustrating causativity the pairs from 1 - 4 also illustrate transitivity, with the pairs to the left being the transitive verbs while those to the right are the intransitives.

Pairs from 8 - 11 illustrate the reversivity opposition, while pair 12 may illustrate what may be called the releasive opposition. Pair 14 seems to illustrate the repetitive opposition between the two members.

In addition to these oppositions one may also find other oppositions. One good example is the polarity opposition between the following Mampruli verbs:

mi - to know *zi* - to not know

This is illustrated in the following sentences where '*zi* ' is an inherent negative verb:

(21a) *N mi*
I know
'I know'

(21b) *N ba mi*
I neg know
'I don't know'

(21c) *N zi*
I not+know
'I don't know'

(21d) **N bi zi*
I neg not+know
'I don't know'

Now, a glance at the table of oppositions will show that derivational affixation is not a very developed phenomenon in Dagaare and by extension other Mabia languages, certainly not as developed as the derivational systems of Bantu (Amidu 1992) and Fulfulde (Fargeli 1993). From the table in (20), there is only one consistent suffix '*-li* ' between the pairs of oppositions. One cannot, however, say that it is any particular derivational suffix as the pairs of words in which it occurs cut across several derivational classes. In this regard, there are no regular sequences of derivational affixes. As can be seen, the rest of the morphological changes in these oppositions do not involve affixation but rather internal vowel changes as in pairs 1 and 2 on the table.

This near lack of derivational morphology with respect to the verb is not surprising in such languages where verb serialisation is very productive. Within African languages there seems to be an interesting relation between verb serialisation and verbal extensions; the two possibly have complementary functions. If this observation is correct, it is my strong belief that languages with a rich verb serialisation system will necessarily have a poor verb derivational system and vice versa. This is an interesting comparative research agenda, at least, within African linguistics. More interesting still is Baker's (1991) suggestion that verb serialisation and verb extensions can be explained by the same grammatical principles.

2.4. The 'postverbal' particle:

Both Bendor-Samuel(1971) and Dong (1981) recognise that the particle '*lá* ' occurs postverbally in Dagaare. The same has been recognised for other Gur languages. In Dagaare, Moore, Kusaal and Mampruli this particle serves to mark affirmation or even emphasis of particular aspects of the sentence.

Distributionally, '*lá* ' , in all cases, is in complementary distribution with the negative polarity particles, as one would expect of an affirming particle. This is illustrated below in (22) where (22a) and (22b) are grammatical but (22c) is ungrammatical because of the violation of the complementarity condition.

(22a) *O na kul la*
S/he fut+pos go home a.m
'S/he will not go home'

(22b) O kʊŋ kul
S/he fut+neg go home
'S/he will not go home'

(22c) *O kʊŋ kul la
S/he fut+neg go home a.m
'S/he will not go home'

It seems then from this analysis that, apart from being an affirming or an emphatic particle, '*lá*' may as well be a positivity particle. This speculation is confirmed when we realise the fact that '*lá*' has a cliticised version '*-ŋ*' whose distribution is much the same as that of '*lá*', except that as a clitic it gets incorporated into its host. Now, this cliticised version behaves much like the aspectual suffixes which are treated as preverbal particles even though they are apparently part of the verb system. The cliticised version like the aspectual suffixes is part of the preverbal particles. In that case then, '*lá*' is arguably also a preverbal particle.

In the formal representation suggested in this work I will thus treat it as belonging to the group of preverbal particles, all of which will be seen as belonging to one functional projection.

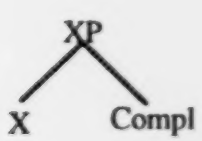
3 . 0 A Two-Level X-Bar Syntax For Dagaare.

In this part of the chapter we consider issues about how to best represent in a formal way the facts of the sentence structure of the Mabia languages that we presented in the last sections. Our attention will be focused more on formalising the structure of the verb phrase.

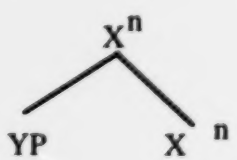
3.1. The framework:

The grammatical framework used here is called a 'two-level X-bar system' developed in Hellan (1991). It is essentially a version of the Government and Binding (GB) theory of grammar developed in works such as Chomsky (1981, 1986) and Hellan (1988). The theory owes its name to the fact that it assumes only two levels of syntactic projection whereas the standard theory assumes three levels. The following configuration types in (23) and (24) will illustrate the basic difference between the two versions:

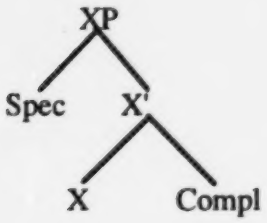
(23a)



(23b)



(24)



The only configuration types found in the two-level system are those in (23), with (23a) being the head-complement configuration and (23b) being the adjunction configuration. In (24), which is the standard GB representation, there is an intermediate projection, X' between the maximal projection XP and the zero level projection or the lexical word, X or X^0 but it could also have the configuration in (23b) above as adjunction.

The theory being presented here is essentially binary branching in nature, thereby giving us very well-structured configurations. Another attractive aspect of the theory is that it is formally economical since we can do without one more level X-bar. This is remarkably advantageous in an era where economy is crucial in issues of grammatical design (Chomsky 1992).

One consequence of these configurations is that while the two versions have a uniform way of treating complements, they differ in the way adjuncts and specifiers are represented. In fact, the present version treats subjects and other specifiers either as heads of functional projections or as adjuncts based on a number of arguments (e.g. both respecting the island constraints (Ross 1967)). In our application of the theory to Mabia syntax we will assume the latter treatment.

3.2. From the lexicon to phrase structure.

We mentioned earlier that a more constraining way of approaching sentence structure is not to catalogue sentence types but to consider all syntactic constructions in the language as properties of their lexical heads, especially the verbs. Argument structure, then, and subcategorisation frames, which are presented in the lexical entries within the lexicon, decide the phrase structure of sentences. This is in line with the projection principle, one of the most fundamental principles of GB and all lexicalist theories of generative grammar. This principle is defined below in (25), according to Chomsky (1981).

(25) The projection principle:
Suppose α is a lexical category and β is a position of argument type.
a. If β is an immediate constituent of a one-bar level projection of α at some syntactic level, then α θ-marks β in α '
b. If α θ-marks β as a lexical property, then α θ-marks β at all syntactic levels.

This principle then stipulates that the argument structure or the complementation properties of heads must be projected on to all levels of the syntax.

Consider the lexical representation of the following Dagaare verbs:

(26a) *ŋmɛ*, V,<NP>, (Agent, Theme)
'beat'

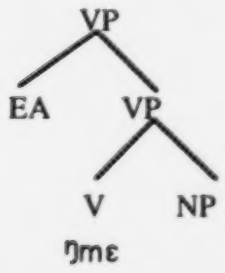
(26b) *Gbir*, V, (Agent)
'sleep'

(26c) *Kʊ*, V, <NP,NP>, (Agent, Theme, Benefactor)
'give'

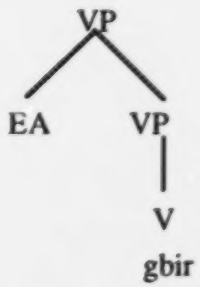
In this representation we have both the argument structure (with the external argument underlined) and the subcategorisation frame for each individual verb which shows how the internal argument will be realised in the syntax.

Now, applying the projection principle and our SVO word order parameter (a reason why GB is also called the principles and parameters approach) we get the following phrase structure representations at D-structure for the above lexical entries for Dagaare.

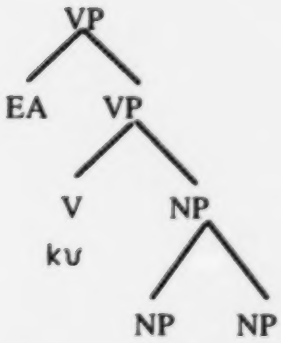
(27a)



(27b)



(27c)



The EA in each of the X-bar projections stands for the external argument of the verb, functioning as agent or subject and appearing canonically to the left of the verb, since we are dealing with an SVO language. Where there are complements (direct internal arguments) these appear canonically to the right of the verb and, following our X-bar configurations in (23), are in a sisterhood relationship with the lexical verb, V, which acts as the head of the maximal projection, VP. We here postpone the way the double objects are represented to a latter part of the formalisation process. As can be seen, the subcategorisation frames also show up in the syntax, realising the theme and benefactor roles of the verb's argument structure. By all intents and purposes then, the argument structure of these verbs are projected into the syntax within the framework of the two-level X-bar. Hence the projection principle is satisfied, and we can already see the contours of the different sentence types - intransitive, transitive and ditransitive - according to which verbs we are dealing with.

Having projected argument structure into the syntax we still need further grammatical and lexical instantiations to achieve full sentences of the language. In particular, we haven't accounted for the preverbal and postverbal particles of the verb phrase that we described in section 2.

3.3. Establishing a TAM system.

3.3.1. The TAM elements.

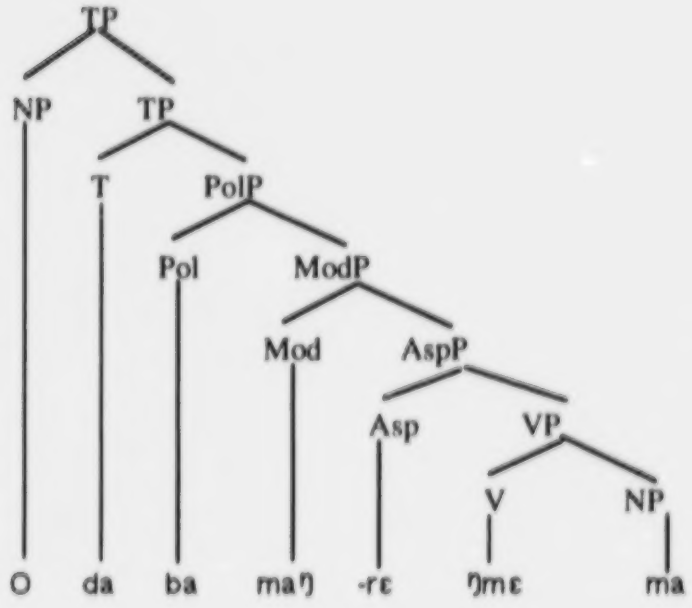
We saw earlier that the particles that express tense, aspect, modality, polarity and other systems are both structurally and functionally prominent in the Mabia verb phrase, playing similar roles as the auxiliary verbs in Indo-European languages. The normal treatment for this functional category of auxiliary verbs within GB literature is to assign them to a separate projection in the syntax. This is usually named AUX (for auxiliary verbs) or INFL or simply I (for Inflection). Rather than being part of the verb in the lexicon, AUX then gets into the verb constellation only after the argument structure has been projected into the syntax.

We, here, assume basically the same algorithm but since our preverbal particles are neither auxiliary verbs nor inflections in the same way as in English or French, the terminologies AUX or I are inappropriate for the Mabia languages. We, instead, replace these with TAM, standing for the temporal, aspectual, modal and all the other functions (including polarity) performed by this node. The TAM projection (TAMP) of Mabia has basically similar functions as the I projection (IP) of other languages, even though they are structurally different. TAMP then is a collective name describing the projections that will be headed by the various functional particles. Included in this collective designation are projections such as TP headed by temporal particles, AP, headed by aspectual particles etc.

We illustrate the representation of TAMP with the sentence in (28a) at D-structure as follows in (28b):

(28a) *O da ba maŋ ŋmɪɛrɛ ma*
S/he past neg. hab. beat+imperf. me
'S/he was not always beating me'

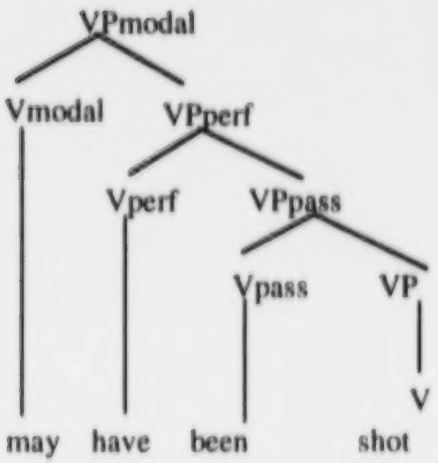
(28b)



The first observation about the diagram in (28b) is that it responds to the two-level configurations as in (23) there being no intermediate level between the maximal projections and the lexical or zero level. We have about four maximal TAM (TP, PolP, ModP, and AspP) projections headed by a temporal node (T), a polarity node (P), a modal node (M) and an aspectual node (A) respectively: a TAMP is a label we put on whichever of these projections serves as the root of a given clause.

An important formal gain we achieve in using the two-level, rather than the three-level, approach lies in the way we treat TAMP. Our approach to the representation of TAMP is a direct consequence of the way auxiliary verbs are handled in the two-level system. The following diagram (29) exemplifies the way auxiliary verbs are handled in Hellan (1991).

(29)

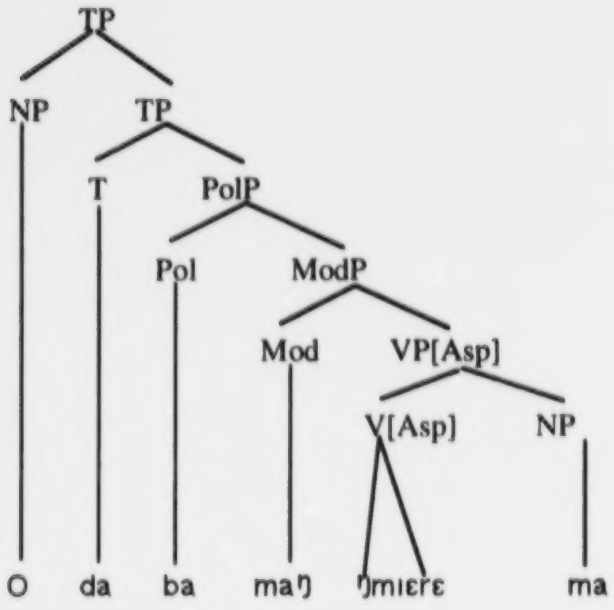


In this constellation, rather than treating auxiliary verbs as specifiers, they are 'most naturally construed as heads of their own verbal projection, with the projection of the verb following as the complement'

We follow basically the same line of formalisation and claim that each of the TAM elements are heads of their own projections with the preceding TAM as its complement and in the case of the last TAM element (here A) with VP as its complement. The requirements that these particles be in a certain kind of sequence, (in this case T, P, M, A...), can be regarded as instances of government, just as the obligatory sequential arrangements for auxiliary verbs are construed as instances of government in Hellan(1991).

There is, however, one issue to resolve in looking at the various TAMP nodes as heads. This involves A i.e. the aspectual suffixes such as '*-rɛ*' above. Aspectual features, though functionally belonging to TAMP, are structurally part of the verb stem at surface structure. The representation of (28a) at surface structure is shown below in (30), where the aspectual particle and the verb become one lexical item (with internal vowel changes).

(30)



This observation then gives us the following configuration where the aspectual particle would be incorporated into the verb as it moves to that position. In this constellation, then, the V category above will take dominance over the aspectual projection.

Another aspect of the two-level approach is the interpretation of subjects as adjuncts of VP (rather than specifiers) following works such as Manzini (1988). One motivation for this comparison is the fact that both obey the island constraints of Ross(1967), one advantage being that the subject will act as the sister of its case assigner, such as the governing verb in Accusative with Inflection (AcI). In our analysis, we can reinterpret subjects, not as adjuncts of VP, but of TAMP. By this reinterpretation, the above advantage will not be available to us but we will not lose anything either since we can still have predication and theta-roles assignment, following the presupposition by this theory that predication and theta roles can be transmitted through auxiliary verbs (and in our case through the TAM particles).

3.3.2. The position and function of *lá* in TAMP.

The last issue is to account for '*lá* ' as part of TAMP. We noted earlier on that in Dagaare '*lá* ' has a very close functional relationship with some of the TAM particles and suffixes. In particular, it is in complementary distribution with negative particles, meaning that functionally, it can be placed on the positive side of the polarity grid. For instance, as shown in (31) below our

example sentence cannot occur with '*lá* ', that is why (31b) is ungrammatical but its positive counterpart in (31c) is grammatical.

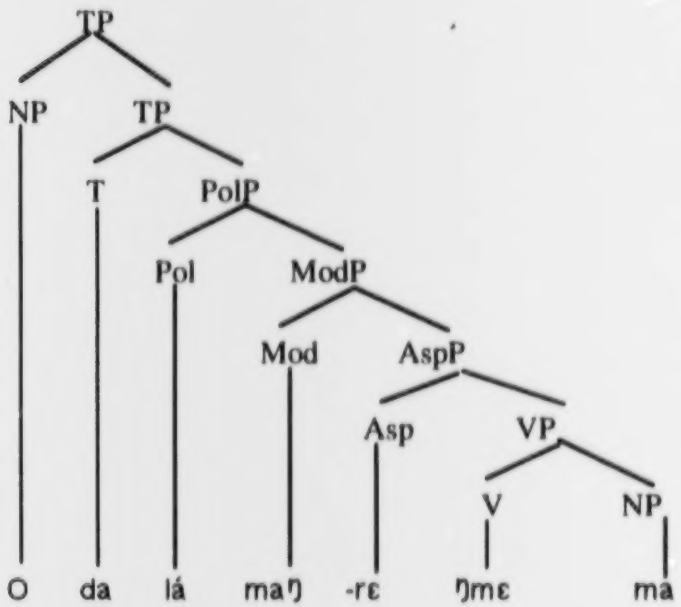
(31a) *O da ba maŋ ŋmɪɛrɛ ma*
S/he past neg. hab. beat+imperf. me
'S/he was not always beating me'

(31b) * *O da ba maŋ ŋmɪɛrɛ ma la*
S/he past neg. hab. beat+imperf. me a.m.
'S/he was not always beating me'

(31c) *O da maŋ ŋmɪɛrɛ ma la*
S/he past hab. beat+imperf. me a.m.
'S/he was always beating me'

Our claim in this formalisation is that at D-structure *lá* occupies the polarity node as shown below in (32):

(32)



Note that this affirmative or polarity particle is not the same as the repetitive particle là shown on the chart in (14). Note also that in line with treating subjects as adjuncts and not specifiers we replace the spec node with an NP such that structurally our subject position is now simply defined as <NP TAMP>. Like IP, TAMP is transparent to theta role assignment, permitting both internal and external theta roles to reach the appropriate NPs. Returning

to the formalisation of *lá*, it will then occur postverbally in the s-structure representation after movement rules have applied.

3.3.3. Constraints on *lá* movement.

One difference between the polarity/affirmative particle movement and aspectual suffix movement lies in the their landing sites. While the latter's landing side is quite straightforward: incorporating with the verb stem, that of '*lá* ' needs some amount of explanation.

One clear constraint is that it never occurs after adjuncts postverbally, confirming our prediction that '*lá* ' is essentially a verbal element. It therefore tries as much as possible to be in the maximal projection of VP even when it moves out of PolP. This constraint is illustrated in (33) where (33b) is ungrammatical following the illicit post-adjunct occurrence. (33c) shows that the cliticised form '*-ŋ* ' of '*lá* ' follows exactly the same pattern as its full form in terms of landing sites.

(33a) *Bayuo da gbiree la vilaa*
Bayuo past sleep+perf a.m good
'Bayuo slept well'

(33b) * *Bayuo da gbiree vilaa la*

(33c) *Bayuo da gbireeŋ vilaa*

A further tendency of '*la* ' to be as close as possible to the verb (or to even get incorporated into the verb), is demonstrated with the occurrence of full NP complement clusters. It occurs before all full NP complements (34a), but never intervenes (34b) nor comes after them (34f). A pronominal complement in the cluster must however intervene between the verb and '*lá* ' as shown in (34c), rendering (34e) ungrammatical. In this case '*-ŋ* ' which is the affixal/cliticised form of '*lá* ' will get attached to the indirect object pronoun as shown in (34d).

(34a) *O da ko la Dɛrɪ a gan*
S/he past give a.m Dery def. book
'S/he gave Dery the book'

(34b) * *O da ko Dɛrɪ la a gan*
S/he past give Dery a.m def. book
'S/he gave Dery the book'

(34c) *O da ko ma la a gan*
S/he past give me a.m def. book
'S/he gave me the book'

(34d) *O da ko maŋ a gan*

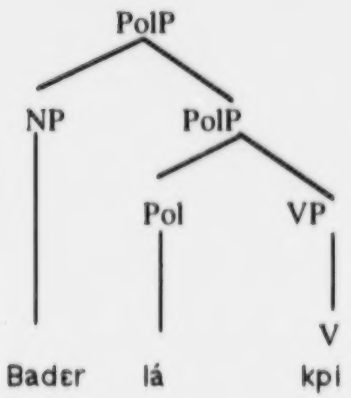
(34e) *O da ko la ma a gan

(34f) *O da ko ma a gan la

Finally, an important constraint on landing sites, after take off from Pol, is rather pragmatic. Pragmatically, '*lá* ' serves to affirm either the rheme or the theme (which have syntactic equivalents as subject and object respectively and semantic equivalents as agent and theme or even actor and action). When it affirms the rheme at canonical subject position it may never even move at all. It moves however when it affirms a left dislocated item and the landing site is preverbally in a position we call CP. If however it affirms the theme (including predicates and their complements) its landing site is postverbally in the VP. As shown below in (35) there is no movement because it affirms the rheme, which is in a canonical subject position.

(35a) *Badɛr la kpi*
Spider a.m die+perf
'Spider died'

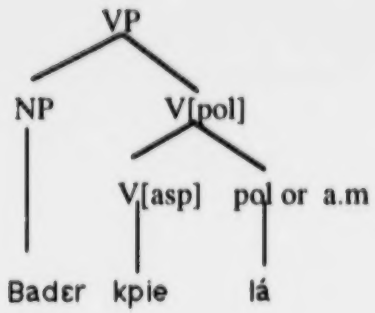
(35b)



However in (36) below there is movement to the postverbal position because it is the theme that is being affirmed here, as shown by the underlined verb.

(36a) *Badɛr kpie la*
Spider die+perf a.m.
'Spider died'

(36b)



Again these figures show that our formalism is able to handle this grammatical and pragmatic relationship very well.

The TAM projection has now been established. We have in the process explained the nature of our formalism and shown how we can already use it to analyse aspects of the verb phrase in Dagaare. We shall spend the last part showing briefly how we can extend our formalism to handle issues like adjunction and double object constructions.

3.4. *Adjunction and double object clusters in Dagaare*

3.4.1. Adjunction

We touched briefly on the issue of adjunction in talking about the interpretation of subjects as adjuncts in this theory. We did not however consider the representation of non subject adjuncts which are represented canonically (i.e, when they are not left dislocated) at the end of the sentence in Dagaare. This is exemplified below in (37a).

(37a) *Bayuo da gbir la sɛŋ puɔ*
Bayuo past sleep+perf a.m bed loc.
'Bayuo slept in bed'

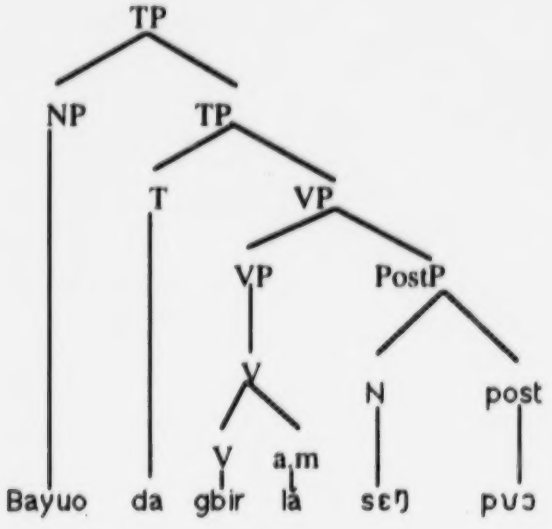
We stated earlier that the verb 'sleep' projects the following argument structure repeated below:

(26b) *Gbir* , V, (Agent)

We claimed further that from the argument structure of verbs we could simply represent all the canonical sentence types. According to the projection principle, however, only one argument will be projected into the syntax. How are we then to account for the locative expression, the place adjunct, in our example sentence?

We could simply say that, like TAM features, adjunction is instantiated at D-structure and after movement rules we get the following diagram in (37b). As will be seen below, however, the two-level system has a better explanatory way of accounting for adjunction and double object clusters.

(37b)



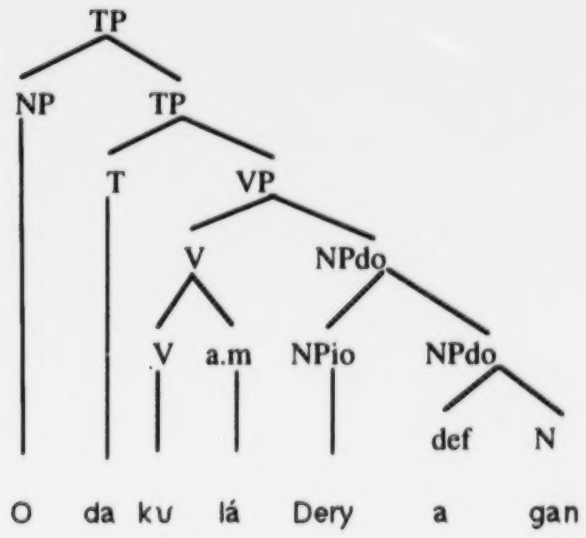
The projection, 'postP' stands for what I call 'postpositional projection' This can be compared with PP (prepositional projection) of other languages. It has been necessary to make this adjustment for Dagaare because of the extensive use of postpositions, rather than prepositions for expressing adjunction, especially locative expressions. With this configuration, we account for both intransitive sentences and adverbial constructions in Dagaare.

3.4.2. Double object clusters.

The double object cluster descriptively illustrates cases of ditransitive constructions. Again our theory proves very much capable of handling this construction. This construction type is illustrated below in (38), with 'a gan' being the direct object and 'Dery' being the indirect.

(38a) *O da ko la Dɛrɪ a gan*
S/he past give a.m Dery def. book
'S/he gave Dery the book'

(38b)



As mentioned earlier on in section 3.3.1, TAM elements are transparent to theta role assignment, so here the verb 'kill' can easily distribute its internal and external theta roles to the appropriate NPs '*O* ' and '*a gan* ' through the various TAMP particles, '*da* ' and '*lá* ' even when they move.

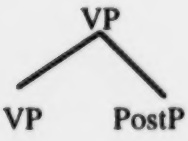
What we have however not accounted for is how government effect gets to the direct object. In other words how do we know which of the NPs in such a cluster is the complement and which the adjunct? (With regard to establishing an adjunct the configuration [VP VP PostP] in (37b) is also important. A theory should have means of predicting which daughter nodes are adjoined and which are complements. These questions have been well addressed in the framework of the 'group analysis' (Hellan 1988) and in the two-level framework under consideration here (Hellan 1991). To put it briefly the account has the underlying principles in (39) and (40) below.

(39) Given two phrasal daughters A and B and their mother node M, if B and M do the same type of service, then A is recessive.

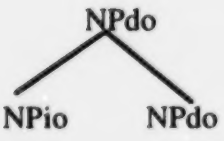
(40) Given two phrasal daughters A and B, if A represents a function F and B represents the argument to F, and argument and value of F are of different types, then B is recessive.

Recessivity here is interpreted to mean adjunction. In the configurations below in (41), extracted from (37b) and (38b), the VP mother and daughter nodes in (41a) certainly do the same type of service while the NPdo mother and daughter nodes in (41b) do the same type of service. According to (39) then PostP and NPio are the recessives, i.e they are adjuncts in (41a) and (41b) respectively.

(41a)



(41b)



Principle (40) further confirms (41b). Since NPdo represents the direct object function, NPio will represent the argument and thereby end up being recessive i.e being the adjunct.

As pointed out in Hellan (1991), if we remove the word 'phrasal' in (40) this principle can equally account for head-complement configurations. In my opinion then we may not need a separate definition for government in this framework. Based on these principles and many of the mechanisms we have seen within this theory and the way it handles Dagaare data we can say that the two-level system has more explanatory power, and at the same time is more economical, than the three-level system.

4 . 0 Conclusion

In this paper, an attempt has been made to summarise the facts of the nominal and verbal phrases of Dagaare and the other major languages in the Mabia language group. Certainly, there still remains a lot to be explored in the nominal and verbal phrases of these languages but the most salient feature, first with respect to the nominal phrase of the group, is the noun class system. Nouns can be categorised into classes based on a pronoun concord system and/or the way they form their singular and plural forms. This is a morphological consideration but we also need to spell out some phonological considerations which will interface with this morphological criterion in order for this classification to succeed. Secondly, with regard to the verb phrase, we found out that most of the verbal semantics such tense, aspect and modality are expressed by preverbal particles. We conclude then that these particles should form a prominent functional group in the verb phrase in these languages.

With the facts of the sentence at hand, we then set off to formalise the verb phrase. Our chosen model of formalisation is the two-level X-bar system as espoused in Hellan (1991), a choice based on the fact that it is both more explanatory and formally more economical than a three-level X-bar system. The most important aspect of the formalisation was the establishment of TAMP to cater for the important role performed by the particles of the verb phrase. We conclude that functionally this is the most important aspect of the verb phrase in Mabia.

Concerning the coverage of data we concentrated on only the canonical declarative sentence of the Dagaare language during the formalisation

process. However, based on the facts presented earlier, we conclude that, just with minor adjustments, the structure of the verb phrase in the other languages of the group like Dagbane, Gurenne and Moore can conform to the analysis presented here.

Not all syntactic constructions were covered. On the one hand, it would be interesting to attempt accounting for verbless sentences (or what Dakubu 1989 designates as minor sentences in Dagaare) since our basic idea is that it is the argument structure of verbs that are projected into the syntax. On the other hand, one would like to see how the theory could be extended to account for complex constructions such as serialisation, nominalisation, coordination, question formation, middles and topicalisation. All these seem to be derived or expanded from basic canonical declarative sentences and should constitute interesting topics of further research in the syntax and semantics of Mabia.

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THE X-BAR THEORY AND THE EWE NOUN PHRASE

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1. INTRODUCTION

The realisation that sentences are hierarchically structured out of constituents belonging to a restricted and perhaps universal set of categories, among other things play a crucial role in the X-bar theory. It led to the abstraction of three levels of categories, starting with the word level category, which consists of such elements as the Noun and the Verb, followed by an intermediate level that is higher than the word level category and yet lower than the third level which is the phrase level. According to Radford (1985), the structural parallelism between the different types of phrases necessitated the replacement of specific statements about specific phrases with a general statement that captures the similarities. This is the reason for the introduction of the category variable X which stands for any major word level category. Attached to this category variable at various levels are, a complement and a specifier which Radford refers to as representing grammatical functions or relations. At the zero level, X is said to be the Head of the X- bar (X') constituent. It combines with a complement to form an X'. This can either combine with an adjunct to form another X' (which implies that adjuncts are not level changing), or combine directly with a specifier to form an X-double bar constituent (X''). Radford (ibid) distinguishes between the immediate head which is the X'' constituent and the ultimate head which is the word level category element. The X'' level is considered to be the maximal projection of a constituent.

The aim of this paper is to study the Ewe noun phrase in the light of the X-bar theory and see what conclusions can be drawn from it. We will adopt the two-level hypothesis of Hellan (1991) as well as the DP-Hypothesis proposed by various authors such as Abney (1986), Hellan (1986) and Delsing (1991). What seems clear right from the beginning is that, if Ewe is analysed under the DP-Hypothesis, it would be said to have *a head final phrase structure.*

In the next section, we will discuss the X-bar notion briefly. In section 3, we will take another look at a previous treatment of the Ewe nominal phrase by Duthie (1988) and make some changes which are necessary for the framework we will work in. Section 4 will contain an attempt to fit the result of the previous section into an X-bar formalism. We will draw our conclusions in section 5.

2. THE X-BAR THEORY

Among the assumptions of proponents of the X'-theory, is one that the head of a constituent is the only obligatory category in an expansion. Moreover, since the phrases are considered to be endocentric, the nuclei (or heads) are

assumed to have the properties of the whole phrase and to determine its distribution. As Nordgård and Åfarli (1990) put it,

"the nucleus puts a mark on the whole phrase by the fact that, among other things , the lexical category that the necleus belongs to is the lexical category of the whole phrase. One can say that the lexical category of the nucleus is prjoected onto the phrase-level.(Pg 39 -Translation mine)

The head supposedly exerts government inside the constituent. This implies that it must be a single item. Finally, Hellan (1991) mentions among other characteristics that the choice of a head for a given category is constant and that all complex constituents have heads.

Concerning the feature analysis of syntactic categories, X'-theory distinguishes four basic categories that can be characterised in terms of the features [+/-N] (ie substantive) and [+/-V] (ie predicative). This notation according to Riemsdijk and Williams (1986) allows for crosscategorial reference to groups of categories such that the categories verbs and prepositions which occur with an NP complement in English, can be referred to with a single designation [-N].

It must be pointed out at this stage that whilst all proponents of the X´theory accept the above in one form or the other, they do not accept it in its entirety. Whilst Chomsky (1970) proposes different levels for the verb and noun phrases (3 and 2 respectively), Jackendoff proposes a 3 level analyses for all categories. There have been recent suggestions for the scaling down of the level to either to 2 or even 1 (Hellan 1991). (Compared to Hellan´s level, Jackendoff would be said to have 4 levels since he does not count from zero whilst the former´s two levels consist of just zero and one). There are debates on the validity of the claim that the head is always present and there there are proponents of the DP theory who claim that the Determiner (Det), and not the Noun, is the head of the NP. What most if not all linguists accept, however, is that every phrase has a head, a possible complement and a possible adjunct. Not all analyses adopt the presence of a possible specifier. The order of these possible elements in relation to the head differs from language to language. It is claimed by some linguists that a child acquiring a new language deduces from the language data it receives, the order of the elements of its language. Others of course think the child has to learn this.

3. EWE NOUN PHRASE

This section will review Duthie´s work on the Noun Phrase in Ewe. He makes use of numbered slots to indicate which elements occur in the phrase and where they occur. Below is the table with the slots;

-4	-3	-2	0	+2 adjective	+4 quantifier	+6 demonstrative	+8 plural	+10 intensifier
kple alo	[NP]	*fe*	noun pronoun quantifier demonstrative					

Duthie's work is mainly geared towards the presentation of constituents that can occur in places where noun phrases are expected in syntax; primarily in subject/object positions. Since my purpose is quite different, I will suggest some modifications that could be made to the the table as I go along.

I will begin however by explaining what the table entails. The minus numbers are filled with constituents that come before the nucleus (head, for our purpose) whilst the plus number slots contain constituents that follow it. -4 contains conjunctions which join two or more noun phrases. An example with two conjunctions joining three noun phrases are:

1 *Kofi kple Ama alo Koku*
Kofi and Ama or Koku

Constituents of this slot do not constitute an integral part of the noun phrase and can therefore be dropped from consideration. -3 slot contain genitive nouns. It combines with -2, which contains the possessive marker and 0, the nucleus, to form the genitive noun phrase as in:

2 *Kofi fe awu* *"Kofi's uniform"*
kofi poss uniform

Ewe distinguishes between alienable and inalienable possessives which involve the presence or absence of the possesive marker. Possessive constructions in family expressions for instance are inalienable and are expressed as in the example:

3 *Kofi fofo*
Kofi father "Kofi's father"

(See Ameka,1991 for possessive constructions in Ewe).

The head occurs in the 0 slot. As I have already indicated, Duthie's main purpose is to describe constituents that occur in the NP position of sentences. He therefore not only has a noun in the head position but also such constituents as the quantifier, demonstrative and "be"-clause ("that"-clause).

The head slot is followed by the adjective slot. This slot can be filled by more than one adjective as in :

4 *ˈNutsu lolo dzeɔeka la*
man big handsome Det " the big handsome man"

The adjective slot is followed by the quantifier as in:

5 *nyånu nyui ɔeka la*
woman good one Det "the one good woman"

The quantifier slot is then followed by the demonstrative slot. This slot should be a demonstrative/determiner slot because either of them can occur here and the two cannot cooccur[1]. Example 5 can be contrasted with example 6 below:

6 *nyånu nyui ɔeka ma*
woman good one that "that one good woman"

Duthie's demonstrative slot can therefore be replaced with a determiner slot so that it can be available for demonstratives, the definite and indefinite articles. A wh-clause may follow the quantifier as in

7 *nyånu nyui eve siwo mekpå le asime*
woman good two Wh+Pl I+see LOC market
"the two good women I saw in the market".

We shall not discuss the relative clause which, obviously, is not part of the noun phrase. At the end of it all comes the intensifier. We will not have much to say on this slot either except that it is mostly composed ideophones and more than one can occur in a noun phrase as in:

8 *"Kofi ˈutå kuraa hΣ*
Kofi INT INT INT "Even Kofi himself"

Duthie mentions in his article that " the nucleus may be followed by an adjective (+2 slot). This assertion should automatically exclude some of the elements listed as occurring in this slot. The first to be discarded is the "be-clause". A "be('that')-clause" constituent can occur before or after a verb as in the following example :

9a *Be wolåm la vivi ˈunye*
that he/she+loves+me sweet side+my
"That she loves me pleases me"

b. *"Ekpåna be mewå nye afemedåwo*
he+see+Hab that I+do my homework+PL
He sees to it that I do my homework

The above examples, however do not guarantee the placing of this clause in a nucleus position. This is because it cannot be followed by any of the plus numbered slot constituents. I will therefore not have anything more to say on the "be-clause" in this framework. In the like manner, quantifiers do not occur in the same slot as the nucleus noun. In Duthie's example:

10. *Geɔ̀ɛɛ tsi anyi*
"several remain ground "A lot remained"

the quantifier does occur alone but it cannot be followed by an adjective. The same can be said for demonstratives in an example like :

11 *ɔ̀ɛsiaɔ̀ɛ nyo*
every be-good anyone is good"

What is happening in the above cases is that there is a noun in the 0 slot yet this noun is implicit. More often than not, it happens to be a noun that has already been mentioned in the earlier part of discourse. Support for this can be adduced from the fact that one can place a generic noun before them as in:

12. *amɛ/nu geɔ̀ɛɛ tsi anyi*
person/thing several remain ground
"A lot of people/things remained"

One can therefore conclude that neither the quantifier nor the demonstrative moves from its position when it occurs alone. The 0-slot is therefore reserved for nouns. One could say though that pronouns occur in this slot although they are not followed by any other constituent. They can't be preceded by any generic noun either. Yet pronouns are inherently marked for number (quantifier) and definiteness so that would explain why they cannot be followed by either of the two[2].

A significant constituent that does not figure on the diagram is a type of nominal derived by affixing "tå"-owner to an item. In most cases these items are attributes as in:

13. *kal\ + tå = kal\tå*
bravery owner brave(person)

TO derivatives have been basically considered to be nominals and when they cooccur with other nouns, the structure is one of nouns in apposition. However, they can be used attributively and in that case they occur interchangeably with adjectives. Examples are;

14a. *ɔ̀ɛvi kal\tå lolo*
child brave big "big brave child" and
b. *ɔ̀ɛvi lolo kal\tå*
child big brave

In the above case one could place the to-nominal in the same slot as attributive adjectives (ie +2) and label the slot as an attribute slot. This would mean that some types of nominals can occur in the same slot as one kind of adjectives.

Another important constituent is the plural marker 'wo'. This occurs immediately after the determiner as in:

15. *Ame-a-wo* 'the people'
person+det+pl

Finally, there is an element 'nenem' that can occur before the nucleus. 'Nenem' can be translated as 'such' in the example:

16. *nenem* *'Nutsu sia*
such man this "such a man"

Its position in the slot is a combination of the -3 and -2 slots. One can say that it occurs in complementary distribution with the genitive noun. This concludes the description of the noun phrase.

4. X-BAR FORMALISM

This section attempts to fit the above structure into the X-bar formalism. According to Chomsky (1988), ".....the only governors are categories of the X^0 in the X-bar system (where X= [+-N,+-V])"(Pg 52). This presuposes that the noun [+N-V] is the governor and thus head of the noun phrase. The first issue to address oneself to is the position of the genitive construction. Traditionally, possessives occurring before the head noun are analysed as specifiers whilst those occurring after it are complements. The same cannot be said for Ewe possessives, however. As already indicated, Ewe distinguishes between the alienable and inalienable possession. The inalienable is so close to the head noun that it does not allow anything (not even a possessive marker) to come between them as example 3, repeated below as 17 illustrates:

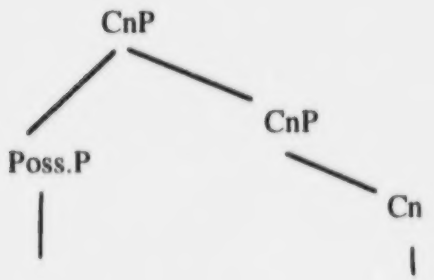
17. *Kofi fofo*
Kofi father "Kofi´s father"

The alienable on the other hand can allow an attribute to come between it and the head noun as in the example below:

18. *Kofi fe kaki wu*
Kofi poss khaki uniform "Kofi´s khaki uniform"

Alienable possessives could therefore be analysed as adjuncts of the CnP whilst inalienable possessives are complements of the head noun. The two will therefore have the respective structures:

20



Support for different syntatic analysis of the possessives can be adduced from the fact that an inalienable possessive noun phrase can serve as the governing category for the binding of an anaphor with the genitive noun being its accessible subject as in the example:

21. *Míese [Komi $_{(i)}$fe adegbefofo tso eɔ̀kui $_{(i)}$'uti]*
we+hear komi poss boast+beat from himself side
"We heard Komi boasting about himself"

Since we are using the 2 level analysis of Hellan (ibid), the possessor which is traditionally considered as an a specifier comes out as an adjunct. Arguments against having an adjunct as an antecedent can be pre-empted by distinguishing two types of adjuncts; argument adjuncts (eg. the possessor) and non argument adjuncts. Inalienable possessives do not allow the above form of binding. This is illustrated by the unacceptability of such example as;

22 * *Mede [Kofi fofo $_{(i)}$ tso eɔ̀kui $_{(i)}$'uti]*
I- save Kofi father from self side
'I saved Kofi's father from himself'

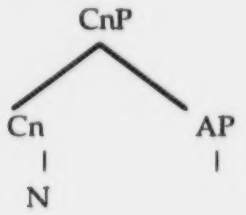
Another differentiating property of alienable possessives is that they can occur after the head noun and an attribute as in the example:

23. *awu nyui nye*
uniform nice my "my nice uniform" (Ameka, personal communication).

These constructions drop the possessive marker "*fe*" and can only occur with the first person and second person singular possessive pronouns. Inalienables cannot occur in such constructions. . In my brief discussion of tå-nominals, I mentioned that the ones used attributively could occur in the same slot as adjectives. Commenting on the ordering of adjuncts and complements, Radford(ibid) states that "complements will always be 'closer' to their head Noun than adjuncts. Considering the distribution of *tå*-nomnals, discussed

above, I am inclined to consider them as adjuncts. The result is the structure below (I will continue to adopt the 2-level analysis for most of my diagrams):

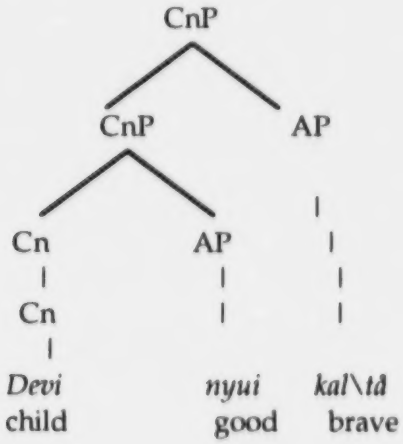
24.



Kofi *kal\tâ*
Kofi brave (person)

The combination of the above with adjectives yield the structures

25.



The next issue to consider is that of the quantifier and the determiner. Traditionallly, these constituents have been anlysed as specifiers. Touching on the problem posed by NP specifiers, Jackendoff proposes the specifier which states that *'an NP specifier may contain at most one demonstrative, one quantifier and one numeral'* (Pg 104).The above constraint applies for Jackendoff's 3-level analysis because possessives and demonstratives do not cooccur. In Ewe, however, they do cooccur as example 24 illustrates:

26. *Kofi fe awu eve sia-wo*
Kofi poss uniform two this-pl "these three uniforms of Kofi"

As pointed out in the introduction we will analyse the Ewe noun phrase in the framework of the DPanalysis. We will therefore consider some motivation for the proposal of this method of analysis .

Among the proponents of this analysis is Hellan (1986) who bases his arguments on government and agreement in the Norwegian noun phrase. Here, the predicative adjective agrees with the subject noun in gender and number. In the examples below:

27. *Tran er sunt* cod-liver is healthy
Bil er dyrt car is expensive
Biler er dyrt cars are expensive

however, the adjectives are in the singular neuter form whilst the first two and third nouns are in the masculine singular and plural respectively. The above sentences are, however, not acceptable if the nouns have definite articles as illustrated by:

28a. **Tranen er sunt*
b. **Denne tranen er sunt*
c. **Bilen er dyrt*

The obvious cause of the unacceptability of the above sentences can therefore be traced to the presence of the definite article which seems to play a more 'influential' role than the head noun. The conclusion Hellan draws from this is that determiners, and not nouns, are heads of the maximal projection of Norwegian noun phrases and that the heads always match the phrase with regard to such morphological features as gender and number whilst non-heads need not match.

Another argument Hellan (ibid) adopts is based on government which he defines as

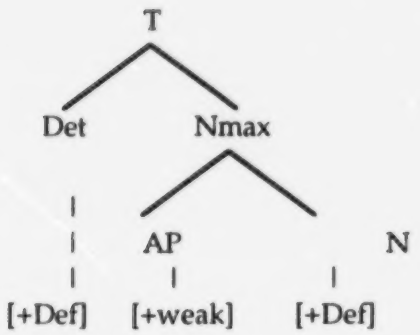
"X governs Y if certain properties of Y (in paradigmatic opposition to others) depend on the presence of X.

The presence of Det governs the property of the following adjective in a noun phrase making it weak. One can say that the weak adjective, in paradigmatic opposition to the strong adjective, requires the presence of the determiner as in

29. *denne gamle mannen*
This old man

The government relation is illustrated in the diagram below:

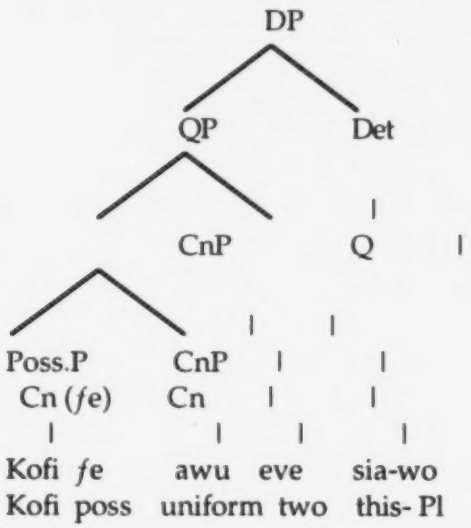
30.



Abney (1986), in his doctoral thesis considers heads such as the determiner as functional elements. He states that these elements constitute closed lexical classes which in most cases are phonologically and morphologiclly dependent. Their primary property is that they select a unique complement and this is due to the fact that they lack semantic content by themselves. By taking single complements therefore, these elements 'project' the meaning of the former whilst adding the extra meaning of determination to them. Delsing (1991) builds on Abneys work giving equal status to the quantifier and the determiner. He states that the two are similar in several respects; they represent the grammatical feature [+-count] and [+-Def] respectively and at least one of them must be present for a noun phase to function as an argument. If both are present, however, the determiner dominates the quantifier which in turn dominates the noun.

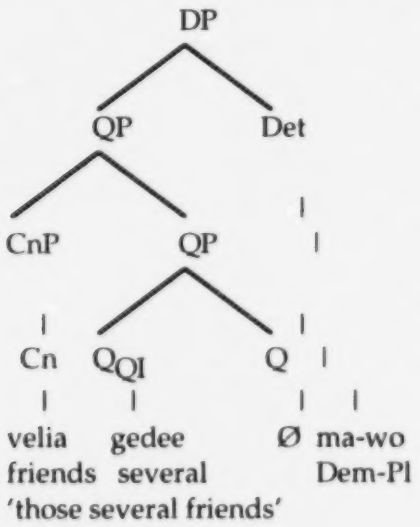
Based on the distribution of elements in the Ewe noun phrase, the DP analysis has an appeal. The slots from -2 to +3 (ie from possessives to adjectives) could be analysed as the semantic content of the noun phrase containing lexical constituents. The remaining slots then contain functional elements that contribute to their quantification and/or determination. The analysis for example 24 will then yield the structure below:

31.



The above structure does not give a status to the plural marker. Brossseau and Lumsden (1992), writing on the noun phrase structure in Fongbe (a language closely related to Ewe) adopt the plural marker as the head of QP instead of items occurring in the +4 slot. In order to account for the fact that it occurs after the determiner (contrary to Ritters () theory where the determiners universally dominate quantifiers), they propose that the determiner does dominate the quantifier at D-Structure but that at S-Structure, the latter undergoes head movement to adjoin to the former. This analysis will, however, leave the +4 slot items unaccounted for. One could think of grouping them under 'quantifier qualifying items' (Q_{QI}) and have them function as complements of the head of the QP. The structure for QP will then be:

32.



The above structure renders the the CnP as an adjunct of the QP. Obviously this solution is not desirable since in our framework the lexical constituent is a complement of the funtional element which projects its meaning.

Moreover other types of constituents of the QP dictate the choice of an alternative solution. One type consists of nominals such as 'kotoku'-'bag', 'agba'-'bowl' and 'atukpa'-'bottle' which denote measure in the language (I will refer to them as measure items). The closest equivalent in English of constructions containing these items are partitive constructions.There is a slight difference, however. Whereas one can say 'a bag of maize' in English one cannot say :

33 *ebli kotoku ade
maize bag -Def

if one wishes to refer to a bag containing maize (note that the above is correct if we wish to refer to a bag that is used for storing maize).This is because measure

items require number. The Ewe equivalent for 'a bag of maize'[3] will therefore be:

34. ebli kotoku deka ade
maize bag one -Def

This shows that measure items are dependent on the Q_{QI} with the Q_{QI}behaving as a head in this respect. It will therefore not be enough to analyse the latter as complements of the the plural marker.

Another item that is dependent on Q_{QI} is 'woame'. This word is composed of 'wo'-3rd person plural and 'ame'-'person'. Its present meaning does not, however, seem to have any of the component's meaning. It is a kind of classifier that indicates that the nominal in question is both countable and plural. Thus one could have:

35a. nyånuvi woame eve
girl Class two 'two girls' but neither
b. *nyonuvi woame deka nor *tsi woame eve
girl Class one water Class. two

The following too can be said about the relation between Q_{QI} and 'wo'. In most cases where the Q_{QI}occurs to denote quantification, 'wo' cannot cooccur with it. Thus one can say:

36. nyånuvi eve but not *nyånuvi evewo
girl two girl two-Pl

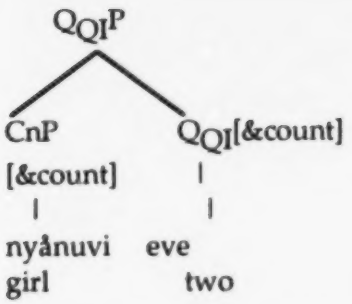
'wo' can only cooccur with Q_{QI} when a determiner intervenes.Thus the example below is acceptable:

37. nyånuvi eve adewo
girl two -Def-Pl

('Gedee'- 'several' is an exception in that it optionally takes 'wo' with or without a determiner. One could have 'nyonuvi gedee' or 'nyonuvi gedeewo'- 'several girls'). The noun, when it occurs alone without a Q_{QI}, however, takes the plural marker to indicate plurality.

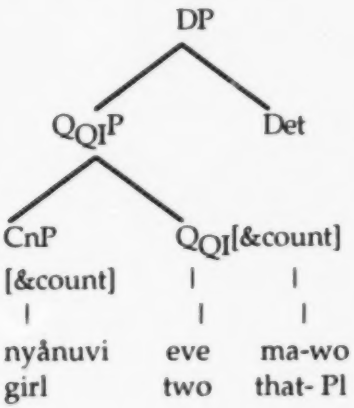
From the above discussions, one can abstract two kinds of QP heads, namely Q_{QI} and the plural marker. Henceforth we shall have Q_{QI}P dominate all Q_{QI} headed QPs. The simplest structure containing Q_{QI} will be:

38.



The above points out the fact that the QP is as important as a DP and that the noun phrase needs only one of them in order to function as an argument[4]. The addition of the determiner gives it the stucture:

39.

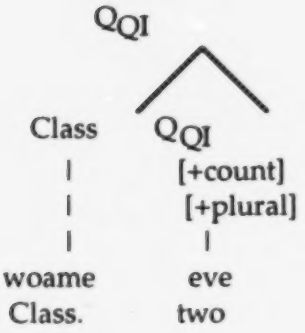


The head of the Q_{QIP} can be seen as copying itself into 'wo' in the above structure. The $Q_{QI}P$ has the following properties:

40. 1.There can be only one item under the terminal Q node
2. Specified Q_{QI}´s have priority on the Q-node
3.Q necessarily dominates 'wo'
4. If a determiner is present, 'wo' attaches to it
5. It is possible for 'wo' not to be realised

The first property satisfies the condition for heads to be able to govern. In order for the head Q (in this caseQ_{QI}) to govern the complement, it must be a single item. The second property guarantees that when Q_{QI} occurs with 'wo', the former remains the head. It is these heads , however, that copy themselves into 'wo' which is adjoined to the determiner because there is a place for only one Q. If the determiner is not present, however, these copies are not able to survive and are therefore dropped. The head could also copy itself into 'woame' with the resulting structure remaining Q_{QI}. This gives the structure:

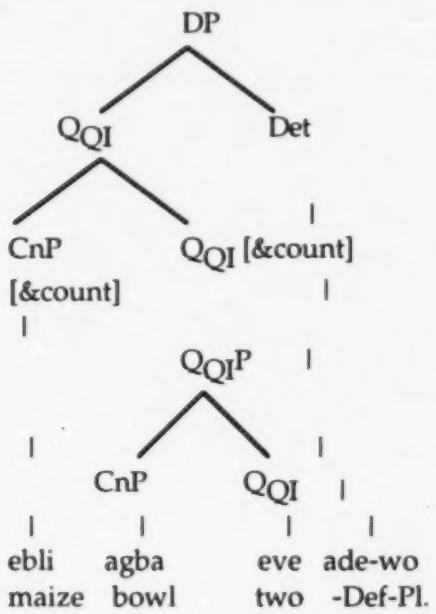
41.



As illustrated the copying of the head into 'woame' can only take place when the former has the features [+count] and [+plural].

The Q_{QI}head can expand itself into another $Q_{QI}P$ .This happens when measure items are also present in the QP. The resultant structure is therefore:

42.



CnP has the feature [&count] which must agree with that of the head (this is without doubt a case of agreement between the governor and the governed). If the features of the higher CnP and Q_{QI} do not match, the lower level one attempts to match.Thus whilst the first rules out such phrases as

43. *målu eve
rice two

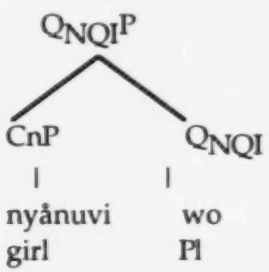
the second will accept

44. målu kotoku eve
rice bag two

One objection to structure 40 is that the head Q_{QI}expands into a phrase. This is so because the resultant measure $Q_{QI}$is really a semantic unit. Moreover it establishes the dependency relation between the lexical items and the functional items. TheQ_{QI}P (which is a combination of the lexical CnP and the functional Q_{QI}) depends on the determiner for its determination. The CnP which consists of the lexical items (note that this phrase contains the genitive constructions as well as nouns having adjectives) depends on the quantifier (which is expandable into another Q_{QI}P) for its quantification whilst the measure CnP obligatorily requires the specified head.

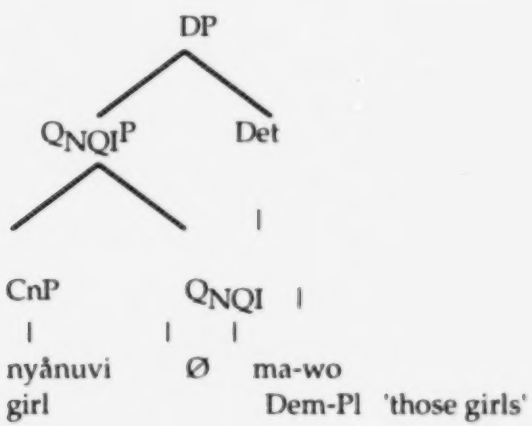
The second type of QP head is the plural marker. Henceforth we will use Q_{NQI}P (ie not qualifying item; in other words, a plain quantifier) for phrases that dominates such heads.This type has the most simple structure since it occurs with CnP items alone. It is as represented below:

45.



This head behaves very much like its copied counterpart in Q_{QI} in that when there is a determiner, it moves to adjoin to it giving it the structure:

46.

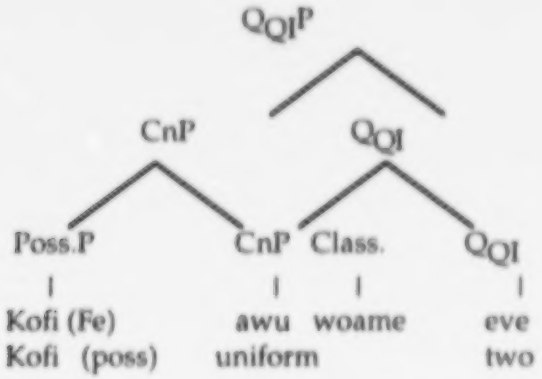


This second 'wo' is therefore, to all appearances, the same as its copied counterpart. The only difference between the two is that one is copied whilst the other is independently generated.

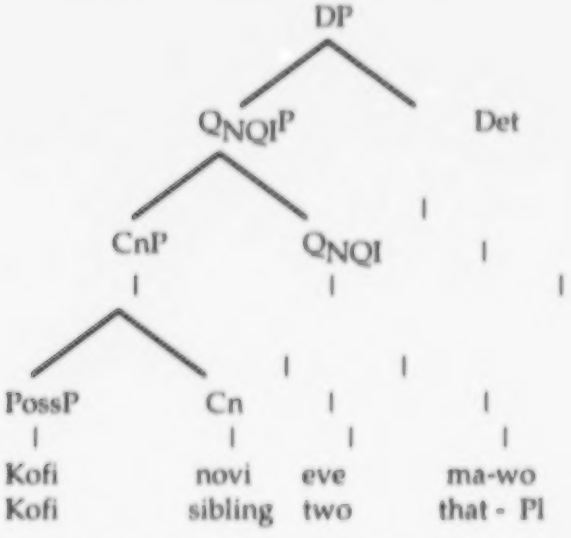
We will now take a look at some structures that illustrate how a complete set of lexical items can take some functionals elements for their

quantification and/or determination. The examples will make use of the two types of possession:

47a.



b.



The possessive items and the others within slots -3 to 0 therefore constitute the lexical items whilst the slots that follow constitute the functional elements.

5 CONCLUSION

In the above discussion we have tried to fix the Ewe nominal phrase into the X-bar formalism using the two-level analysis and the DP-hypothesis. As illustrated, the lexical components of the nominal phrase occur before the functional elements. One can thus see from the above discussion that Ewe has a head final noun phrase with the direction of government being to the left. The lexical items are analysed as belonging inside CnP and they serve as complements to the functional elements. Ewe differs from English in that where measure items are concerned the functional element expands into a phrase. This syntactic phrase however remains a semantically single unit and can therefore govern the CnP by assigning to it the specification of determination and/or quantification.

NOTES

1. Some northern Ewe dialects do have the distal demonstrative following a determiner as the example below which would be said by speakers of the Ho dialect:

Devi -e mi
child the that 'that child' (Ameka, personal communication)

2. The third person singular pronoun occurs with the near and distal pronouns 'sia'-this and 'ma'-that respectively when they occur alone. The result is

E-sia di-m me-le
Pron-Dem want-Prog I -be 'I want this one'

This is proof that demonstratives do not occur in the 0-slot because in the above, we could place the pronoun in the 0-slot and let the deonstrative remain in the determiner position. This pronoun, however, does not have a referential content because it is the same even if the things refered to are in the plural as in

E-sia- wo di-m me-le
Pron-Dem Pl. want-Prog I -be 'I want these ones'

3. In Norwegian, the presence of a preposition in the structure eg 'en sekk med erter' points to the bag containing the beans whilst the the phrase without a preposition eg 'en sekk erter' refers to the content of the bag (ie. beans).

4. Ewe does have a noun phrase that seems to be without a quantifier or a determiner. An example is:

devi gba abåbågo megbana klogo o
child break snail shell Neg-break-hab tortoise shell Neg
'every child who breaks a snail shell does not necessarily break a torroise shell'

In the above example one could say that the universal quantifier is implicit.

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AFFIX ORDER IN FULFULDE AND THE SCOPE INTERPRETATION

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1.0. Introduction.

In the following I will first explain what lies behind the scope interpretation of affix order. Then comes a brief presentation of the verbal derivations in Fulfulde and some of their combinatorial possibilities. These derivations present themselves as suffixed to the verbal root. Excluded from this account is what I call the VAP-marker (Voice Aspect Polarity - following Mary McIntosh 1984). This marker always end the extended verb complex (not counting clitics). It is a difficult item to handle parallell to the derivational affixes because of the complexity of the form. Thus, passives are not treated along with the other verbal derivations here.
I will not attempt to give a full explanation of the verbal affix order in Fulfulde. Rather, I intend to discuss the possibility of a scope interpretation of the linear order. The relation of the surface form (affixes) to the semantics of this kind of interpretation will be focussed over the syntax of it. It will be shown that scope cannot, even theoretically, account for every possible combination of derivations. And where there is a potential semantic difference parallell to potential scope alternations, the scope interpretation will fail.
I will mainly be concerned with Fulfulde data from Adamawa, Cameroon. But Pulaar data (the Senegal Fulfulde dialect) drawn from Yero Sylla (1979) will also be presented, along with some Swahili data (Wald-79, Vitale-81, Baker-88). A short discussion of Baker's (1988) Incorporation Theory and in particular the Mirror Principle follows in section 4.0.

2.0. The Scope Hypothesis.

Various scholars have suggested that there is a close connection between the surface order of verbal affixes and the scope relationship between them. This supposition variously involves both so-called derivational and inflectional items. Woisetschlaeger (1977, discussed in Muysken 1980) proposes that in the "unmarked case" universal grammar fixes the scope relationship between the semantic domains of verbal categories (such as Tense, Mood and Aspect) according to which category appears closest to the verb stem (The TMA Ordering Principle and The Verbal Hierarchy Hypothesis). This is not very interesting to apply to Fulfulde, because of the fused or "portemanteau" form of the VAP-marker. But derivational processes have been explained in some Bantu languages by relating linear morphological order to semantic scope and chronological syntactic processes (see 4.0. below). For our purposes, Vitale (1981) gives the example that the verb morphology of reciprocals is such that the ordering of reciprocal and

causative in Swahili may affect the output. I cite (p.174); "..the combinatory possibilities of reciprocal (R) and causative (C) would be: *RC, RCR, CR and CRC* where the meaning of the verb is partially interpreted by the number and type of applications of either rule within the derivation. This, in turn, is realized in the left-to-right order of morphological elements within the verb". (He continues to list some exceptions in such derivations.) A concrete example of a *"CR"* application in Swahili is given in (1):

(1) Juma na Fatuma wa-na-pend-**ez-an-a**
Juma and Fatuma they-prs-love-**CAUS-REC-**
'Juma and Fatuma please each other'

I understand that the linear order of the affixes must be *"CR"* for the sentence to be grammatical. The RECIPROCAL operates on the complex [verb+CAUSE]. But turning the affix order, and with a different argument structure, one can get a sentence corresponding to "make X and Y love each other / be friends", thus *"RC"*, where CAUSE operates on [verb+REC]. (2) is an application of this scope alternative (This is *not* Vitale's example. The verb *pendanisha* is found in Johnson 1939-1991). Note that the argument structure has to be different from the one in (1):

(2) Hamisi a-na-pend-**an-ish**-a Juma na Fatuma
Hamisi he-prs-love-**REC-CAUS**-ind Juma and Fatuma
Hamisi makes Juma and Fatuma love each other (Hamisi reconciles J. and F.)

Baker (1988) calls this phenomenon "the Mirror Principle effect". The morphological changes take place in exactly the same order as the associated syntactic changes. This means that the morphological order reflects the associated derivations. Baker claims that this is what happens in a wide range of languages, using mainly Bantu languages to support his view. He also mentions that the order of verbal morphemes in Quechua and Eskimo determines which predicates have scope over which.

For there to be a potential scope difference, at least one of the derivations must increase the complexity of the predicate. CAUSATIVE is typical in this respect; there is always a causing event and a caused event. When CAUSATIVE occurs with another derivation, the question is which event this latter one modifies. An INSTRUMENTAL / MODAL could modify the causing or the caused event, likewise REPETITIVE, ASSOCIATIVE, COMPLETIVE, RECIPROCAL and CELERATIVE. These are perhaps the most important ones (see section 3.0 below for explanations of the derivational types). Theoretically, other types of ambiguity effects may appear in combinations with for instance REPETITIVE, because it makes the predicate be repeated (hence a complex predicate). COMPLETIVE, BENEFACTIVE and CELERATIVE combined with a REPETITIVE derivation

on the verb may mean either that the repeated event is subject to one of the other modifications, or that both the first and the second one are subject to it. Based on this theoretical possibility of explaining morphological order, I construe the scope hypothesis:

(3) THE SCOPE HYPOTHESIS

The linear order of derivational affixes on a verb reflects their semantic scope in a complex predicate.

As mentioned above, the core idea of this hypothesis has been supported by some linguists. Let it be no secret that I will argue against it in this paper. I find no evidence in Fulfulde to support it. Therefore, it is clear to me that The Scope Hypothesis cannot be universally valid. The discussion will rather turn out to disapprove what other linguists have thought to be a univeral principle (cf.The Mirror Principle of Baker 1988 see section 4.0.).

3.0. Fulfulde data

The verbal derivations in Adamawa Fulfulde include the following types and their respective phonological forms:

(4)

A -REVERSIVE (REV): -(i)t-	Reverses or undoes the concept of the verb.
B -REPETITIVE (REP): -(i)t-	The event being repeated. Also iterative readings.
C #-ASSOCIATIVE (ASS): -(i)d-	The agent being accompanied by an associative agent.
D -COMPLETIVE (COMPL): -(i)d-	The event being completed, fulfilled.
E #-CAUSATIVE (CAUS): -(i)n-	There is a causer to the event.
F #-INSTRUMENTAL (INSTR):-(i)r- / -(o)r-	To do something with a specified instrument.
G #-MODAL (MOD): -(i)r- / -(o)r-	To do something in a certain, specified way.
H -SIMULATIVE (SIM): -ikin-	The agent pretending to do something.
I #-BENEFACTIVE (BEN): -an- / -in-	The event being done to the benefit of someone / on behalf of someone. Includes MALEFACTIVE and GOAL.
J -CELERATIVE (CEL): -(i)law-	The event taking place relatively fast.

K #-RECIPROCAL (REC): -indir- / -ootir-	Participants of an event acting mutually upon each other.
L -DISTANTIVE (DIST): -oy-	A distance must be traversed for the event to take place.

The derivations marked with # affect the argument frame of the verb.

All of these derivations can combine with other derivations. But some types are less common in interactions than others. REC, for instance, is seldom found together with other extensions. SIM is very seldom found at all, and most often derive from intransitive verbs. Hence SIM hardly ever cooccur with other derivations, and even less with REC which obligatorily requires a transitive verb to operate on. Also, REC and ASS never seem to cooccur for semantic reasons; they operate on the same participants of the predicate, and in similar ways. This is redundant, and close to contradictory. (In Swahili,for instance, ASS and REC are expressed through one and the same affix on the verb.) The concept of the verb is a good indication on which derivations may operate on it. And the concept of an extended verb (verb+der.affix) must be taken into account before deriving an even more complex verb. Generally speaking, it is probable that semantics and pragmatics govern the combinatorial possibilities of derivations, and not syntax or morphology, though argument structure is involved. There are restrictions to how many arguments a verb can take, and thus how many valence increasing derivations may cooccur on one and the same verb. The limit reaches *three* VP-internal arguments in Fulfulde, or three 'objects' if one wishes. There may be syntactic reasons for this. But anyway, it seems hard for both speaker and listener to handle more objects, cognitively.

Much can be said about each of the actual cooccurences of derivations in Fulfulde. I shall stick to facts and present a sample of sentences, concentrating on CAUS-derived verbs combined with other derivational types. Sometimes it is difficult to see the history of successive derivatons; which derivation precedes the other one(s), chronologically. It is not always obvious that Z derives from Y which derives from X etc. Neither phonological nor syntactic criteria are sufficient to explain the derivational history of a three times (or more) derived verb. Even the semantics of one sentence may fail to give the one and sole interpretation of its history, and hence its meaning. One might have to use context to disambiguate a predicate of that kind.

3.1. CAUSATIVE and ASSOCIATIVE

An interesting case arises with ASS derivation combined with CAUS. The question here is whether the ASS affix marks an associate causer or an associate causee. Both solutions are possible with the same affix order in Fulfulde:

(5a) Mi fiji-id-in-i mo bee soobaajo maako
I play-ASS-CAUS-VAP him with friend his
I made him play together with his friend

(b) Min fij-id-in-i mo
We(excl) play-ASS-CAUS-VAP him
Together, we made him play.

It is obvious that (b) cannot mean "We made him play together", because the causee (agent of embedded predicate) is a single participant. The causer controls the item corresponding to "together / with". The NP representing the causer contains more than one participant, thus associate participants. In (a) the causee has an associate participant, while the causer is a singular one. The ASS affix is therefore coded on the verb because of the plural participants of the causee. Hence the interpretation given to that sentence. A sentence like () could arise, though, where both causer and causee have more than one participant:

(6) Min fij-id-in-i mo bee soobaajo maako
We(ex) play-ASS-CAUS-VAP him with friend his
We made him play **together** with his friend
or: **Together** we made him play with his friend

This sentence alone does not give any answer to the scope of ASS; the Fulfulde 'together'. Context is decisive to understand for which predicate the speaker stresses that there is (an) associate doer(s). Anyway, the two readings of the sentence are not far from one another. The ASS derivation does not affect the semantics of the sentence dramatically. One may perfectly well drop any ASS affix, and the sentences in both (5) and (6) will be grammatical. The difference seems to be one of emphasis. The point to be made here is the fact that the linear order of the verbal affixes cannot be reversed, as in (7), which is ungrammatical, and so fails to be interpreted as the sentence in (5b):

(7) *Min fij-**in-id**-i mo
We(ex) play-**CAUS-ASS**-VAP him
Together, we made him play

If the relative closeness of the affixes to the root had been decisive for the interpretation of the predicate, we would have expected the sentence in (7) to be grammatical. This can be shown schematically by two different bracketings of the complex predicate. In (8ab) the semantic interpretation would differ depending on which of the derivational affixes functions as the outermost operator on the verb:

(8a) [[play-ASS] CAUS] (CAUS as the outermost operator)
(b) [[play-CAUS] ASS] (ASS as the outermost operator)

Theoretically, then, in (8a) a CAUS affix operates on an ASS-derived verb, whereas in (b) an ASS affix operates on a CAUS-derived verb. But only the application of (a) is grammatical in Fulfulde, and this with a potential semantic ambiguity. It means that there is no direct link between affix order and scope interpretation. It is possible to solve the scope problems by paraphrasing the CAUSATIVE construction. This solution leaves no semantic ambiguity like the strict affix order of derived verbs does. We are left with a causative matrix verb and an embedded VP. The ASSOCIATIVE idea may add to either of the verbs of the complex with different semantic results. (9ab) correspond roughly to (5ab):

(9a) Min wa‰-**id**-i Be fija
We(excl) do-ASS-VAP they play
Together we made them play

(b) Min wa‰i Be fij-**id**-a
We(excl) do they play-ASS-VAP
We made them play together

3.2. CAUSATIVE and INSTRUMENTAL / MODAL

INSTRUMENTALS and MODALS most often behave in the same way. They are therefore treated together. In (10) they are found in combination with CAUS. Each example given shows that the order is quite fixed; namely verb+CAUS+MOD:

(10a) Mi dar-n-ir-i sekko am bee le‰‰e
I stand-CAUS-INSTR-VAP grass-mat my with sticks
I held up my grass-mat with sticks

(b) Mi diw-t-in-ir-i mo bee hoolo
I jump-REP-CAUS-MOD-VAP him with noise
I scared him with my noise

(c) Mi diirt-in-ir-i mo hooseere bee sawru
I descend-CAUS-INSTR-VAP him hill with stick
I made him walk down the hill with a stick

(10a-c) seem ambiguous both in Fulfulde and in English as they stand. The question is whether it is the causer or the causee that controls the stick. Very briefly, to disambiguate the sentence both in Fulfulde and in English one may use fronting or clefting to express that the stick becomes the instrument in the hands of the causer. In Fulfulde one may also paraphrase

the CAUSATIVE construction and then code the INTRUMENT derivation with either the matrix or the embedded verb, which yields two different interpretations. It is rare, though, to find the matrix verb coded with the -ir- affix. The best ways to disambiguate the sentences in (10) are as follows, (11ab) compared to (10c):

(11a) Bee sawru mi wadi o diirti hooseere
With stick I made he descend hill
With a stick I made him walk down the hill

(b) Mi wadi o diirt-ir-i hooseere bee sawru
I made he descend-INSTR-VAP hill with stick
I made him walk down the hill with a stick (the causee using a stick)

Yero Sylla (1979) discusses scope interpretation of adverbs (time, place and manner) in Pulaar (Senegal Fulfulde) causative constructions. He presents the sentence in (12) as ambiguous:

(12) Aali naan-n-ir-ii Demmba seese
Aali enter-Caus-Inst-Tns Demmba slowly
"Aali made Demmba enter slowly"
or: "Aali slowly made Demmba enter"

(Sylla does not use the term MOD in addition to INSTR. "Seese" is a nominal and acts more like instrumental NPs than Time and Place adverbs.)
The point to be stressed here is the ambiguity of the sentence. The order of the affixes remains the same in both interpretations, a clear counterexample to the scope analysis. Sylla claims that fronting of "seese" alone does not disambiguate the sentence. The only way to do that is by paraphrasing the CAUSATIVE. So, (13ab) are his periphrastic equivalents to (12):

(13a) Aali wa‰-ii Demmba naat-ir-de seese
Aali make-Tns Demmba enter-Inst-Inf slowly
"Aali made Demmba enter slowly"

(b) seese Aali wa‰-ir-i Demmba naat-de
slowly Aali make-Inst-Tns Demmba enter-Inf
"It is slowly that Aali made Demmba enter"

We can conclude that with respect to CAUS and INSTR interactions, the two Fulfulde dialects mainly behave in the same way.

I have not heard the sentences in (10) with reversed affix order, but I have encountered a few examples where the INSTR / MOD affix precedes the CAUS affix on the surface derived verb. A slightly complex situation arises.

One of my informants accepts both orders of the affixes in the following predicate:

(14a) Mi laBB-**in-ir**-i yonde am bee buurdi
I clean-**CAUS-INSTR**-VAP entrance with broom
I cleaned my entrance with a broom

(b) Mi laBB-**ir-in**-i yonde am bee buurdi
I clean-**INSTR-CAUS**-VAP entrance with broom
same as above

Taking the morphological order of the derivational items into account, a potential scope difference would schematize as in [[clean-CAUS] INSTR] and [[*clean-INSTR] CAUS]. The latter one is out because it is weird to say "the entrance is *clean with a broom*", without indicating an agent. Both (a) and (b) are understood as if the agent (the causer) controls the instrument. An inanimate object cannot control an instrument. If there was a strict scope mechanism in the language, it would only accept (a), because the INSTR operates on the CAUS. Thus, (14b) is an argument against the scope interpretation of affix order. However, a note has to be made at this stage. The base verb for (14) is **laaB-** ("be clean"). The phonological change on the verb root, to **laBB-**, appears only with CAUS derivation. It is a regular phenomenon in Fulfulde. Intransitive verbs of the CVVC-type changes to CVCC when CAUS-derived. Another example illustrating this is **heew-** ("be full") which derives to surface form **hebb-in-** ("to fill"), consonant mutation taking place in the final consonant cluster. Here, too, some informants accept that the root may be followed by either **in-ir** (CAUS-INSTR) or by **ir-in** (INSTR-CAUS). I suspect that this alternation is due to the phonologically split CAUS form, both appearing on the root and as an affix. This yields, in some sense, the following morphological order: [[verb+CAUS]-INSTR-CAUS]. Hence the seemingly violation of the "normal" morphological order CAUS-INSTR is not so severe, after all. Why the CAUS is repeated, is not clear. The affix may in some cases be dropped, like with **hebb-it-:** ['full'-CAUS]+REP which means "to fill again"; no CAUS affix is added here. If this hypothesis is correct, the argumentation about semantic scope potentiality following the examples in (14), is more or less superfluous. Nevertheless, the discussion of CAUSATIVES and MODALS as a whole by no means supports the scope interpretation. The order of the affixes is thus quite fixed: verb+CAUS+INSTR, but with some exceptions. And the interpretation does not coincide with a scope principle. We may now proceed to another derivational combination which is quite clear, but includes a problem with the BENEFACTIVE to be explained. It will turn out to be relevant also for the case we have dealt with above.

3.3. CAUSATIVE, BENEFACTIVE and MOD / INSTR

The order of the affixes is without any encountered exception: verb-in-an-, with the BEN as the outermost one. (15) illustrates this:

(15) Yaya jipp-**in-an**-i mo buutaali
Yaya dismount-**CAUS-BEN**-VAP her maize
Yaya put down the maize load for her

Considering the three derivational types, CAUS, MOD and BEN, their internal morphological order is as indicated in (16). The CAUS precedes both MOD and BEN and, normally. These three derivations may combine on one verb at the same time:

(16) Aysatu wang-**in-ir-an**-i bingel haala ka bee laabi didi
Aysatu appear-**CAUS-MOD-BEN**-VAP child matter this ways two
Aysatu exposed the matter to the child in two ways

One problem that may arise in Adamawa is the phonological form of the BEN affix. There are two alternative affixes: **-ǻn-** (which is most widely known in the literature) and **-in-**. The latter one in many cases corresponds phonologically to the CAUS affix, **-(i)n-**. When BEN interacts with CAUS it will preferrably take the form -an-. But it is common also in interactions with MOD / INSTR. One might encounter the sequences **-ir-in-**, **-in-ir-** and **-ir-an-**, but not ***-an-ir-**. Added to the verb **fe''-** ("to chop"), there are three alternative ways of expressing INSTR-BEN interactions:

(17a) Yaya fe''-**ir-in**-i Buuba leggal e fe''irde
Yaya chop-**INSTR-BEN**-VAP Buuba wood with axe
Yaya chopped the piece of wood for Buuba with an axe

(b) Yaya fe''-**in-ir**-i Buuba leggal e fe''irde
Yaya chop-**BEN-INSTR**-VAP Buuba wood with axe
same as above

(c) Yaya fe''-**ir-an**-i Buuba leggal e fe''irde
Yaya chop-**INSTR-BEN**-VAP Buuba wood with axe
same as above

(d) *Yaya fe''-**an-ir**-i Buuba leggal e fe''irde
Yaya chop-**BEN-INSTR**-VAP Buuba wood with axe
same as above

We can see that BEN may occupy the "CAUS-position", and this is probably due to the phonological similarity of the two items. The -(i)n- position of CAUS has a contamination effect on the -in- affix of BEN. I have no other

explanation for the alternation. The important thing is to watch out in sentences like (17a), and not put a CAUS reading into it. Because if one does, one might be trapped in an attempt to explain the order syntactically or semantically, as with the scope analysis. Only (17b) would be grammatical with a CAUS reading.

3.4. CAUSATIVE and RECIPROCAL.

I will use the same kind of evidence in this paragraph as in the previous ones. The examples below show that the scope interpretation hypothesis does not apply to Fulfulde. It has been suggested for other languages, such as Swahili (see section 2.0.), that the derivational history of a CAUS-REC interaction can be seen on the verb. The verb **ku-pat-an-ish-a** in Swahili (meaning 'to reconcile', literally 'to make get together') has both a REC extension (-an-) and a CAUS extension (-ish-) outside it. The chronological order of the derivations is thus reflecetd in the afix order. This is conform to The Scope Hypothesis. The examples given in (1) and (2) also support a scope interpretation. This means that the language will offer the two following schematic possibilities to express the scope difference in such interactions: 1:[[verb-REC] CAUS] and 2:[[verb-CAUS] REC]. For a sentence corresponding to "X makes [Y and Z do something reciprocally] ", Fulfulde, like Swahili, should ideally use the first solution. But that is not the case, as shown in (18ab), where (a) shows the REC-derived predicate and (b) shows that there is a causer to the reciprocal situation:

(18a) Be don paam-**indir**-a
They VAP understand-**REC**-VAP
They understand each other.

(b) Haa mi fam-**n-indir**-a Be
Let I understand-**CAUS-REC**-VAP them
Let me make them understand each other

In (b) there is a CAUS morpheme intruding into the [verb+REC] complex. The natural semantic unit here is ['verb'+REC]. So, semantically, the derivational history of the verb in (18b) is that the REC derivation happens first, followed by the CAUS derivation. It might be fruitful to talk about a derivational history; that one *derivational process* applies before another. But it cannot be traced systematically in Fulfulde, because the CAUS morphological item acts as an infix if one looks at the REC-derived verb as some kind of semantic unit.

Morphological interactions involving CAUS and REC are not frequent. The construction seems heavy, so language users rather apply periphrastic structures. I schematized two logical possibilities for CAUS-REC combinations using different bracketings. We have seen the first one

applied, although not conform to the scope hypothesis. The second one, [[verb+CAUS] REC], is a theoretically possible construction, e.g. in a predicate-type like "Ai and Bj make each otherij pay", where the REC *derivation* would apply after the CAUS one. Such a solution could not have been mistaken for a type 1 combination since the CAUS participants would be identical to the REC participants, unlike type 1. (19a) seems very marked. The speaker would in most cases find an analytic way of expressing it.

(19a) ??Be njoB-n-indir-i
They pay-CAUS-REC-VAP
They made each other pay

(b) Kanko job-n-i oo-do. Kanko boo job-n-i oo-do.
He-emph pay-CAUS-VAP him-here. He-emph too pay-CAUS-VAP him-here.
He payed this fellow, and this fellow payed him. (pointing and gesticulating)

The CAUS affix never seems to occur outside the REC affix in Fulfulde.

(20a) Mi daay-n-ootiri-i na'i am
I far-CAUS-REC-VAP cows my
I made my cows go far away from each other/ I scattered my cattle

(b) Mi yoB-n-indir-i Be
I pay-CAUS-REC-VAP them
I made them pay each other

Examples of periphrastic constructions with CAUS as matrix verb and REC coded as an affix on the embedded verb, (21a) corresponding to (20b):

(21a) Mi wadi be njob-njob-t-indir-a
I made them pay-pay--REC-VAP
I made them pay each other

(b) Buuba ‰on wa‰-a no Be faam-indir-a
B. VAP make-VAP so they understand-REC-VAP
Buuba is making them understand each other

3.5. CAUSATIVE and CELERATIVE.

The only affix in Fulfulde that can clearly be traced to a lexical word, is **-(i)law-**; the CEL affix. **Law** (meaning "fast") appears as an adverb and is more productive than the affixal use. But since it is so easy to understand as a derivational item, it might be interesting to look at it in combination with

CAUS, to see if the clear semantic interpretation of the item can more easily affect the scope of it. Deriving the verb **winnd-ugo** ("to write") with a CEL affix, we get the following outputs:

(22a) Abdullahi winnd-**in-ilaw**-i mo pataakewol
Abdullahi write-**CAUS-CEL**-VAP him letter
Abdullahi made him write a letter fast

(b) Abdullahi winnd-**ilaw-in**-i mo pataakewol
Abdullahi write-**CEL-CAUS**-VAP him letter
Abdullahi made him write a letter fast

My informants did not report any meaning difference between (22a) and (b). There is a *potential* ambiguity in the sentences. It may be that the causing event happens fast, or that the caused event happens fast. The latter interpretation seems to be preferred, if context is unspecified. The same situation arises when the *adverb* **law** is used in the corresponding sentence:

(23) Abdullahi winnd-in-i mo pataakewol law
Abdullahi write-CAUS-VAP him letter fast
Abdullahi made him write a letter fast.

Once again, the best way to disambiguate the sentence is to paraphrase the causative construction and to code the CEL affix or the adverb either with the causing or the caused event, like in (24):

(24a) Law Abdullahi wadi o winndi pataakewol
Fast Abdullahi made he write letter
Fast, Abdullahi made him write a letter

(b) Abdullahi wadi o winnd-ilaw-i pataakewol
Abdullahi made he write-CEL-VAP letter
Abdullahi made him write a letter fast (the *writing* going on fast)

Other dialects may use the CEL more productively, and there can be other answers to the celerative ambiguity question. But, rather clearly, the combination CAUS-CEL does not support the scope hypothesis.

3.6.Summary of Fulfulde data.

I have chosen some of the derivations that typically cooccur with CAUS, and these combinations could be expected to give evidence to the scope interpretation of affix order. But they appear to be counterexamples to it. Therefore, The Scope Hypothesis must be abandoned for Fulfulde, and followingly as a universal principle.

Instead of a neat and dynamic principle governing the morphological items, we are left with an ordering of affixes where each affix seems to have its preferred place on a left-to-right line. ASS happens to precede CAUS, while INSTR / MOD, BEN and REC follow after CAUS. CEL seems more free, but seldom combines with other derivations. Other affixes, such as REV, REP and COMPL are found to the left - and SIM and DIST to the right of CAUS. This does not give a complete picture of the affix order, however. Non-CAUS affixes also have fixed internal order. In fact, the order from A to K given in (4) above is the one that gives the most correct picture of normal linear combinations. My data are supported by other descriptions of Fulfulde, in particular Arnott (1970). In what follows I will pursue the scope interpretation idea in the form it takes in the Inorporation account of derivations and The Mirror Principle (cf Baker 1988).

4.0. Incorporation Theory.

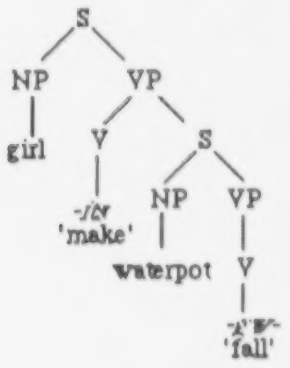
Briefly speaking, the idea of derivation in Baker (1988) is one of syntactic movement. A noun, preposition, or verb may move from its X°-position configurationally to a higher node and combine with another X° element, subject to independently motivated principles. The combination of an X° preposition or verb with a matrix verb (*Preposition Incorporation* and *Verb Incorporation*, respectively) is what we know appears as affixes to a verb. Causative constructions are complex predicates, as we have seen in the above discussion. There is a causing event and a caused event. In periphrastic causatives, this complexity shows clearly on the surface; two seperate verbs and their respective argument structures. Causative derivation is an instance of Verb Incorporation, according to Baker. The embedded verb moves and adjoins to the matrix verb. In the literature similar ideas have been proposed and named for instance "Predicate Raising" in generative semantics, "Clause Union" in Relational Grammar, and "Merger" in the theory of Marantz (1984). The biclausal structure is supposed to be underlying, and morphological causatives preserve the thematic relations from underlying to surface structure, according to Baker. Therefore, periphrastic and morphological causatives are called *thematic paraphrases;* they have parallell D-structures (cf.The Uniformity of Theta Assignment Hypothesis- UTAH). The grammatical functions change, though. (25ab) illustrate this for Chichewa (the examples are taken from Baker 1988,p.148-9):

(25a) Mtsikana ana-chit-its-a kuti mtsuko u-gw-e.
girl AGR-do-make-ASP that waterpot AGR-fall-ASP
'The girl made the waterpot fall.'

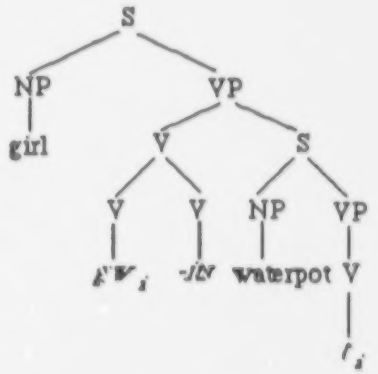
(b) Mtsikana anau-**gw-ets**-a mtsuko.
girl AGR-**fall-make**-ASP waterpot
'The girl made the waterpot fall.'

The first sentence in (25) is clearly a periphrastic construction, similar to the ones we have seen in Fulfulde, except that in Chimwiini the causative affix is present also in the matrix verb (**-chit-its-**). The embedded verb (**-gw-**), then, undergoes syntactic movement, which yields the incorporated verb in (b). The corresponding (simplified) configurational structures in (26ab) illustrate the same process:

(26a)



(b)



Derived structures like the one in (26b) are unlike structures for basic predicates, i.e. underived structures, in that they contain traces left by the moved X° item. This is an instance of Verb Incorporation. *Applicatives* are explained through Preposition Incorporation. Both of the processes are grammatical function changing. Other such processes in Bakers theory are Passive, Antipassive and Possessor Raising. In various ways they affect the argument structure of the verb. The term applicative covers the derivations INSTR / MOD and BEN / MAL / GOAL in Fulfulde. It is true that this kind of derivation may paraphrase such that the respective ideas are expressed through PPs.

Now, Baker predicts that such processes may follow each other. The ordering of the syntactic movements must be reflected in the morphology of the verb. Hence, if a verb moves to attach to a causative verb, this will surface as **verb + CAUSATIVE affix**. A BENEFACTIVE derivation (Preposition Incorporation) applying after this surfaces as a BENEFACTIVE affix *outside* the already CAUSATIVE-derived verb. This means that such a universal ordering principle of head movement rules, both in Fulfulde and in Chimwiini, will appear on the verb with CAUS closest to the verb, and BEN next. This is stated in the Mirror Principle as it appears in Baker (1988):

(27) The Mirror Principle:
Morphological derivations must directly reflect syntactic derivations (and vice versa)

This is a descriptive generalization proposed to be a necessary consequence of universal grammar.

4.1. Semantic consequences of the Mirror Principle.

Although the Incorporation Theory captures only a part of the Fulfulde derivational system, the processes affected must be investigitated. Baker concentrates on the fields of syntax (Government and Binding). But it is clear that his theory must have consequences for the meaning of the derived predicates. The former derivation feeds the latter, and I cite (p.373): "..the order of the affixes corresponds to the semantic scope of those affixes, with outermost affixes interpreted as superordinate predicates". Thus, there is a scope difference between 'Yi and Zj caused each otherij to verb' (verb+CAUS+REC) and 'X caused Yi and Zj to verb each otherij' (verb+REC+CAUS). This corresponds to The Scope Hypothesis which had a semantic point of departure. The investigation of affix order in Fulfulde is counterfactual to this hypothesis, and followingly also to The Mirror Principle. When for instance CAUS and REC combine, CAUS comes closer to the verb than REC, independent of interpretation. Principally, I don't argue against an ordering of *derivations* as such. There might be a history of derivational combinations. But morphology in Fulfulde shows no overt sign of telling this history. It seems to me, contrary to what Baker proposes, that syntax has no direct access to morphology, at least what this matter concerns.

I will also investigate some of the Swahili examples given by Baker (1988) with the above discussion in mind. The sentence in (28) is originally given in Vitale (1981, p.165), with a question mark for grammaticality (probably because of the unusual constellation of three internal arguments). Vitale uses the term DATIVE for APPLICATIVE, but for conveniance I prefer the latter:

(28) ?Haji a-li-m-pik-**ish-i**-a mke wake chakula rafiki yake
Haji he-pst-her-cook-**CAUSE-APPL** wife his food friend his
'Haji made his wife cook some food for his (her) friend'.

Baker states that this is the one acceptable pattern when both Preposition Incorporation and Verb Incorporation take place; the CAUS precedes the APPL, linearly. Vitale also gives the corresponding periphrastic causative, with the same translation:

(29) Haji a-li-m-**fanya** mke wake a-m-pik-**i**-e rafiki yake chakula
Haji he-pst-her-**make** wife his she-him-cook-**APPL**-SUBJ friend his food
'Haji made his wife cook some food for his (her) friend'.

There can be no doubt from the interpretation given for both (28) and (29), that the 'friend' is the one receiving food, thus the APPL object for the verb 'to cook'. However, in the morphological variant (28), the APPL affix occurs *outside* of the CAUS affix. One would expect the APPL to operate on the CAUS-derived predicate, modifying the causer event. The meaning of the sentence would then be that the causer event is on behalf of the 'friend': It was Haji's friend who was supposed to make the wife cook, but Haji did it in his place. But evidently, this seems not to be the semantic result of the morphological ordering. If there is a connection between the syntactic and morphological ordering of principles, and that this has consequences also for the semantic scope of the affixes, I don't see how the example in (28) can illustrate this.

In other cases the ordering of morphemes seems to fit the actual semantic scope of the affixes. In (30), the same affix order occurs as in (28), but now the APPL affix clearly operates on the CAUS-derived verb. The sentence is from Wald (1979):

(30) Ni-li-m-l-ish-i-a mwanamke watoto
I-past-her-eat-CAUS-APPL-ind woman children
I fed the children for the woman [[X eat-cause Y] for Z]
[X cause[*Y eat-for Z]]

I have argued against the scope interpretation in Fulfulde, now it seems to me that it does not hold entirely for Swahili, either. It is not impossible that syntax may rule out certain derivational combinations and affix orders in some languages, but there is no basis for stating The Mirror Principle as a universal principle.

5.0. Affix ordering exceptions.

The normal order from A to L mentioned in (4) can sometimes be disturbed. There are instances of combinations where affixes like CAUS and MOD 'should' precede other affixes like REP and ASS, for instance, but where the reverse order appears. Typical examples are extensions of **yah-r-** ('bring') and **hul-n-** ('frighten'):

(31a) Be yah-r-d-i mo
They go-INSTR-ASS-VAP him
Together they brought him along

(b) Mi hul-n-it-i mo
I afraid-CAUS-REP-VAP him
I scared him again

In both these cases the affix order does not follow the "normal order". In fact they are conform to the scope interpretation. This is typical for highly frequent verbs. The leftmost affix has fused with the radical, and every other derivational affix will be added to the right of the fused verb. The normal order is ungrammatical with the cases in (31). So, when *verb+extension* is regarded as both a semantic and phonological unit, a scope interpretation is natural. Besides, such fused verbs very often have idiosyncratic meanings. Their lexical inputs cannot always be traced as a composition of the concepts of 'verb' + 'affix', respectively.

5.1. Final remarks.

The Incorporation Theory and The Mirror Principle claim to give an explanation of the ordering of for instance CAUS, REC, and APPL (BEN, INSTR/MOD) relative to the verb. These are grammatical function changing processes. I have shown that this theory and The Scope Hypothesis, which I construed, don't work for Fulfulde, and partially not for Swahili. In addition, The Incorporation Theory does not explain the ordering relations between for instance REP and CAUS, MOD, REC etc., or between ASS and CAUS, MOD,BEN and DIST, to mention a few.

Affix order does not reflect the order of the derivations as they happen semantically. We have to seek other explanations to find the reason why the affix order in Fulfulde seems to be rather fixed. Different possibilities will be explored in Fagerli (1993b - to appear as "hovedoppgave", M.A thesis).

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A Diachronic Study of Fula Conjugation

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1 Introduction and Aim

1.1 The Fula Language

Fula, which belongs to the Atlantic branch of the Niger-Congo language family, is spoken by approximately 20 million *Fulɟe* in West Africa from Mauritania, Senegambia, and Guinea in the west to Cameroon, Chad, and the Central African Republic in the east.[1] The language is called *Pulaar* (in Mauritania and Senegambia), *Pular* (in Guinea), and *Fulfulde* (from Mali and eastwards). Since this is a pan-dialectal study, I use the non-indigenous term *Fula*, in order to avoid making a choice between *Pulaar*, *Pular*, and *Fulfulde*. This is a practice adopted by many recent writers (cf. Miyamoto 1989).

1.2 The Dialects of Fula

Because of the traditionally nomadic life of a great part of the Fulɟe (cf. Arnott 1974), the classification of Fula dialects is difficult, that is, more difficult than the classification of dialects of sedentary peoples. For practical purposes, Arnott (1970) finds it convenient to speak of six main dialect areas. I shall base my classification on Arnott (ibid.), but prefer to split up Arnott's Fuuta Tooro (Mauritania/Senegal/Gambia) area into Fuuta Tooro (Mauritania/Senegal) and Gambia (cf. (1)), because of some important differences between the data from these two areas.

(1) *Eight Fula Dialect Areas*

Abbreviations	*Areas*
FT	1. Fuuta Tooro (Mauritania and Senegal).
GA	2. Gambia
FJ	3. Fuuta Jaloo (Guinea).
MA	4. Maasina (Mali).
SO	5. Sokkoto, western Niger, and Burkina Faso.
CN	6. 'Central' northern Nigeria.
AD	7. Aadamaawa (in both Nigeria and Cameroon).[2]

[1] In accordance with Williamson (1989) and Wilson (1989), I use the terms *Atlantic* and *Niger-Congo* instead of the earlier *West-Atlantic* and *Niger-Kordofanian*.

[2] The traditional definition of 'Aadamaawa Fula' is the Fula of the old Kingdom of Moodibbo Aadama, which, according to Stennes (1967:v) "includes present-day Adamawa and Sardauna provinces in Nigeria and much of the Fulani-speaking areas of Cameroon, but not Maroua ɓr Kalfou." I have used a slightly wider definition, in which the Jam'aare (Diamaré) dialect described in Noye (1974) is included in the Aadamaawa dialect.

My sources for the different dialect areas are presented in (2).

(2) *Sources*

FT (FUUTA TOORO): Guiraudon (1894), Gaden (1931), Labouret (1952), Sylla (1982), Labatut & al. (1987), Prunet (1989).
GA (GAMBIA): Swift & al. (1965), Gamble & al. (1984).
FJ (FUUTA JALOO): Reichardt (1876), Arensdorff (1913/1966), Labouret (1952), Zubko (1980).
MA (MAASINA): Fagerberg-Diallo (1984).
SO (SOKKOTO, WESTERN NIGER, AND BURKINA FASO): Westermann (1909), Labouret (1952), Bidaud & Prost (1982), Miyamoto (1989).
CN (CENTRAL NORTHERN NIGERIA): Arnott (1970), McIntosh (1984), Jungraithmayr & Abu-Manga (1989).
AD (AADAMAAWA): Taylor (1953), Klingenheben (1963), Stennes (1967), Labatut (1973), Noye (1974), Pelletier & Skinner (1981).

1.3 Aim

The purpose of this paper is to put forth a reconstruction of Fula conjugational endings in two hypothetical earlier stages of the language, accompanied by a detailed presentation and discussion of the steps in the development from these earlier stages to the modern dialects.

I shall distinguish three diachronic stages (cf. (3)).

(3) *The Three Diachronic Stages Distinguished*

	Abbreviations	
i.	MF	Modern Fula
ii.	CF	Common Fula
iii.	PF	Pre-Fula

MF is all the modern dialects, as represented in (1) above.
CF is the latest possible stage from which all modern dialects can be derived. This stage is reconstructed from MF primarily by means of the comparative method.

PF is a stage reconstructed from CF by applying the method of internal reconstruction. The distinction between CF and PF, which is also discussed in Endresen (1993), implies the postulation of a certain number of changes through which all dialects of Fula have gone after having separated from other languages of the (hypothetical) Atlantic language branch.

This paper is part of a more extensive study of the diachronic aspects of Fula phonology and morphology. The first results are presented in Endresen (1993), and further results will follow in Endresen (in preparation).

1.4 Structure of the Paper

The paper has the following structure: First, in § 2, the MF finite verbal endings are presented, followed by the CF system. These two systems are not very different, which is natural, since the dialect variation is minimal and superficial. Then, in § 3, the corresponding PF endings are presented and analyzed. In § 4, the postulated development from PF to CF is sketched out. § 5 is a discussion of independent evidence that supports the claims in §s 3 – 4. The more complicated aspects of the development from CF to MF are discussed in § 6. Finally, in § 7, I discuss a revised version of PF; there are strong indications that the PF conjugational system was simpler than the CF system.

Methodologically, diachronic studies have to start from the modern stage, and by means of various methods we try to work our way backwards into the past. Still, my presentation does not consistently follow that order. It is my experience that things are easier to understand when they are presented the other way round, from the past and into the present.

2 The Modern Fula and Common Fula Finite Verbal Endings

2.1 Modern Fula

In (4), the finite verbal endings[3] found in the modern dialects are presented, with a specification of which dialects have which endings, when there is some dialectal variation.

Some endings have a slightly different form when followed by enclitic subject or object pronouns; differences that are relevant for this paper are presented in § 2.2.2.

Most of the endings in (4) can be combined with a preterite element (PE) **no(o)**. Certain problems connected with this PE are discussed later, in § 5.2.1. I have also excluded the imperative plural and the continuative imperative endings from the discussion in this paper, with the conviction that this will not distort the discussion, only simplify the presentation.

Fula has three Voices: A(ctive), M(iddle), and P(assive). There are maximally 11 different endings in each voice, which will be referred to by the letter-number combinations in the leftmost column of (4); they are explained in (5).

[3] Notice that I refer to everything that follows the stem as an *ending*. An ending, therefore, includes one ore more morphs or *suffixes*. The distinction between ending and suffix enables us to circumvent several complicated and irrelevant segmentation problems.

(4) *MF Finite Verbal Endings*

	A (ACTIVE)	M (MIDDLE)	P (PASSIVE)
P1	**-(u)**[4]	**-i**	**-a**
P2	**-i**	**-ii** FT FJ MA SO CN AD **-i** GA AD	**-aa** FT FJ MA SO CN AD **-a** AD
P3	**-ii** FT FJ MA SO CN AD **-i** GA AD	**-iima** FT GA FJ MA **-ike** FJ MA SO **-oke** SO **-ake** SO CN AD	**-aama**
PN	**-aani** FT GA **-aali** FJ MA **-aayi** MA CN **-aay** SO AD **-ay** SO AD	**-aaki** FT GA FJ MA CN AD **-aki** SO	**-aaka**
S1	**-(u)**	**-o** FT GA FJ MA SO CN AD **-a** MA SO CN AD **-(u)** AD	**-e**
S2	**-a**	**-oo** FT FJ MA SO CN **-o** GA AD	**-ee** FT FJ MA SO CN **-e** GA AD
S3	**-(u)ma** SO CN (AD) — FT GA FJ MA	**-ooma** CN (AD) — FT GA FJ MA SO	**-eema** CN (AD) — FT GA FJ MA SO
SN	**-aa**	**-aako** GA FJ — FT MA SO CN AD	**-aake** GA FJ — FT MA SO CN AD
I1	**-at** FT GA **-ay** GA FJ SO CN AD **-an** FT FJ MA SO AD	**-oto**	**-ete** FT GA FJ MA SO CN AD
I2	**-ata**	**-otoo** FT FJ MA SO CN **-oto** GA FJ AD	**-etee** FT FJ MA SO CN **-ete** GA AD
IN	**-ataa**	**-ataako** GA FJ SO CN AD **-otaako** FT GA MA	**-ataake** GA FJ SO CN AD **-etaake** FT GA MA

(5) *Morphosyntactic Terminology for MF Finite Verbal Endings*

P1	perfective, emphatic
P2	perfective, relative *or* perfective, narrative
P3	perfective, general
PN	perfective, negative
S1	(punctual) imperative-desiderative
S2	subjunctive *or* imperfective, narrative
S3	imperfective, vague
SN	stative, negative
I1	habitual-future, general
I2	imperfective, relative
IN	imperfective, negative

[4] "-(u)" means "Ø *or* u", where u normally occurs only when "needed" for phonotactic reasons. In other cases, there is no ending, i.e., Ø. Systematically, "-(u)" will be treated like Ø.

The letter-number combinations in the leftmost column of (5) are meant to give some indications about both semantics and morphology of the historical reconstructions that will be presented later.

2.2 Common Fula

2.2.1 Some Simplifications

Not all endings in (4) will be included in the general discussion. All P3 endings (cf. (6)), will be left for a future study, for the following reason: The P3 endings are all to a certain extent irregular, and it is natural to postpone the discussion of them until the CF and PF forms of the remaining and more regular endings have been established. [5]
As can be seen from (4) and (6), the S3 endings are found in very few dialects, and it is my working hypothesis that they are local innovations from after the CF stage. Therefore, they are excluded from CF. I shall present arguments in favor of this hypothesis in 6.4.

(6) *Endings Left for a Future Study*

	A (ACTIVE)	M (MIDDLE)	P (PASSIVE)
P3	**-ii** FT FJ MA SO CN AD **-i** GA AD	**-iima** FT GA FJ MA **-ike** FJ MA SO **-oke** SO **-ake** SO CN AD	**-aama**

2.2.2 Towards Common Fula

Some of the dialect variation in (4) concerns *vowel quantity* (cf. (7)).

(7) *Interdialectal Vowel Quantity Variation*

P2M	**-ii**	/	**-i**
P2P	**-aa**	/	**-a**
P3A	**-ii**	/	**-i**
PNA	**-aay**	/	**-ay**
PNM	**-aaki**	/	**-aki**
S2M	**-oo**	/	**-o**
S2P	**-ee**	/	**-e**
I2M	**-otoo**	/	**-oto**
I2P	**-etee**	/	**-ete**

In some dialects, especially those of AD, certain long vowels have been shortened, resulting in a system practically without word-final vowel quantity oppositions. Therefore, the CF system will be based on those dialects in which

[5] Guiraudon (1894:27) makes the following interesting comment on FT P3 forms:
"GÉRONDIF. — La particule *ma*, ajoutée à la racine ou au thème, avec voyelle de liaison obligatoire, forme un gérondif invariable, qui s'emploie aussi adverbialement: *'arima* (étant venu), *ñaloma* (étant jour, de jour), *moytima* (étant malicieux, malicieusement). Précédé du pronom personnel sujet, le gérondif remplace quelquefois l'aoriste: *mi 'arima* (je suis venu, littér. moi étant venu)."

word-final vowel shortening has not taken place. This is our first step towards the reconstruction of CF.

As already mentioned in 2.2.1, certain endings are not found in all dialects. While the S3 endings are treated as post-CF innovations, I shall treat the SNM (**-aako**) and SNP (**-aake**) endings as CF endings that have been lost in most dialects, for reasons that I shall come back to in 6.2. This is our second step towards CF.

By changing (4) in accordance with these two steps, we obtain (8).

(8) *Towards CF I*

	ACTIVE	MIDDLE	PASSIVE
P1	**-(u)**	**-i**	**-a**
P2	**-i**	**-ii**	**-aa**
PN	**-aani** FT GA **-aali** FJ MA **-aayi** MA CN **-aay** SO AD	**-aaki**	**-aaka**
S1	**-(u)**	**-o** FT GA FJ MA SO CN AD **-a** MA SO CN AD **-(u)** AD	**-e**
S2	**-a**	**-oo**	**-ee**
SN	**-aa**	**-aako**	**-aake**
I1	**-at** FT GA **-ay** GA FJ CN AD **-an** FT FJ MA SO AD	**-oto**	**-ete**
I2	**-ata**	**-otoo**	**-etee**
IN	**-ataa**	**-ataako** GA FJ SO CN AD **-otaako** FT GA MA	**-ataake** GA FJ SO CN AD **-etaake** FT GA MA

In (8), there is still some dialect variation. Consider first the I1A endings. In (9) the proposed CF reconstruction of the I1A ending is presented, and the MF endings are repeated.

(9) *The I1A Ending in CF and MF*

CF	MF	
***-at**	**-at**	FT GA
	-ay	GA FJ CN AD
	-an	FT FJ MA SO AD

The CF reconstruction ***-at** is straightforward. It is based on two facts. First, of all nine different I-endings, eight start with Vt in all dialects. This is a strong indication that this was originally the case for the I1A ending as well. Secondly, the I1A ending has a **t** in all dialects before vowel initial enclitic object pronouns (cf. for example the AD forms in (10)).

(10) *AD I1A Forms*

'o	**wáll-an**	**daadá**	**maako**	'S/he helps her/him mother'
s/he	*help-I1*	*mother*	*his/her*	
'o	**wáll-an-mo**			'S/he helps her/him'
s/he	*help-I1-her/him*			
'o	**wáll-at-am**			'S/he helps me'
s/he	*help-I1-me*			
'o	**wáll-et-e**			'S/he helps you'
s/he	*help-I1-you(sg)*			

I1A ***-at** has changed into **-an** / **-ay** in syllable final position. This change is well-known, and is discussed elsewhere, for example in Labouret (1952:64-6). Therefore, I see no reason to discuss this more thoroughly.

There are three other kinds of dialect variation in (8).

First, PNA varies between **-aani**, **-aali**, **-aayi**, and **-aay**. For CF, I shall propose the ending ***-aay(i)**, that is, *either* ***-aay** *or* ***-aayi**. The problems with this ending are discussed in 6.1.

Secondly, INM and INP have this variation: INM **-ataako** and **-otaako**; INP **-ataake** and **-etaake**. The CF endings I shall propose here, are INM ***-ataako** and INP ***-ataake**, respectively. The justifications for these reconstructions are presented in 6.3.

Thirdly, S1M varies between **-o**, **-a**, and **-(u)**. I propose ***-o** as the CF ending; cf. the discussion in 6.5.

Consequently, I present the CF endings in (11).

In (11), I have also proposed a segmentation of the different endings. Notice the details in (12), which are important for the reconstruction of PF.

(11) *Common Fula*

	A (ACTIVE)	M (MIDDLE)	P (PASSIVE)
P1	***-(u)**	***-i**	***-a**
P2	***-i**	***-ii**	***-aa**
PN	***-aa-y(-i)**	***-aak-i**	***-aak-a**
S1	***-(u)**	***-o**	***-e**
S2	***-a**	***-oo**	***-ee**
SN	***-aa**	***-aak-o**	***-aak-e**
I1	***-at**	***-ot-o**	***-et-e**
I2	***-at-a**	***-ot-oo**	***-et-ee**
IN	***-at-aa**	***-at-aak-o**	***-at-aak-e**

(12) *Common Fula: Some Details*

• *1. V ~ VV alternations*
(i) 1M, 1P, NM, and NP end in short vowels.
(ii) 2M and 2P end in long vowels with the same quality as the final 1M, 1P, NM, and NP vowels.

• *2. Ø ~ V alternations*
(iii) 1A and NA have no final vowel.[6]
(iv) 2A end in a short vowel.

• *3. Negative suffixes*
(v) NM and NP have the suffix **-áák**, while NA has the suffix **-áá**.

• *4. Vt suffixes*
(vi) I-endings have the suffix -Vt, whose vowel is **a** or identical to the vowel of a following suffix.[7]

These details are seen more clearly from the presentation in (13), where the suffixes of the different endings are placed in one out of three positions.

(13) *Systematic Presentation of Common Fula Finite Verbal Endings*

	A	C	T	M	I	D	P	A	S
	I	II	III	I	II	III	I	II	III
P1						**i**			**a**
P2			**i**			**ii**			**aa**
PN		**áá**	**y(i)**		**áák**	**i**		**áák**	**a**
S1						**o**			**e**
S2			**a**			**oo**			**ee**
SN		**áá**			**áák**	**o**		**áák**	**e**
I1	**at**			**ot**		**o**	**et**		**e**
I2	**at**		**a**	**ot**		**oo**	**et**		**ee**
IN	**at**	**áá**		**at**	**áák**	**o**	**at**	**áák**	**e**

3 The PF Finite Verbal Endings

In (14) I present the postulated PF verbal endings corresponding to the CF endings in (11) and (13). Note the following conventions used in (14):
• ***N** – a nasal stop whose place of articulation has not been established.
• ***V** – a vowel whose quality has not been established.
N** and ***V** should *not* be construed as, for example, archisegments or underspecified segments. ***N** is discussed in § 5.1, and ** **V** in § 7.1.

[6] The semivowel **y** in PNA will be discussed later.
[7] Let me emphasize that notations like "-Vt" should not be construed as any kind of "underlying representation", but merely as a notational device to express the "surface" generalization "vowel (of varying quality) plus **t**".

(14) *Pre-Fula Finite Verbal Endings*

	A	C	T		M	I	D		P	A	S	
	I	II	III	IV	I	II	III	IV	I	II	III	IV
P1			**i**				**ii**				**aa**	
P2			**i**	**N**			**ii**	**N**			**aa**	**N**
PN		**áák**	**i**			**áák**	**ii**			**áák**	**aa**	
S1			**a**				**oo**				**ee**	
S2			**a**	**N**			**oo**	**N**			**ee**	**N**
SN		**áák**	**a**			**áák**	**oo**			**áák**	**ee**	
I3	**Vt**		**a**		**Vt**		**oo**		**Vt**		**ee**	
I4	**Vt**		**a**	**N**	**Vt**		**oo**	**N**	**Vt**		**ee**	**N**
IN	**Vt**	**áák**	**a**		**Vt**	**áák**	**oo**		**Vt**	**áák**	**ee**	

There are altogether 27 different endings, which are built up from 9 different suffixes, which are presented in (15), where they are also analyzed morphosyntactically/semantically, *on the basis of the usage of the MF endings*. A discussion of possible morphosyntactic/semantic developments will be left for a future study.
In the leftmost column in (15) I have indicated the number of endings in which each suffix occurs.

(15) *Morphosyntactic Analysis of the Individual Pre-Fula Suffixes*

Suffixes in Position I					
9	**Vt**	Habitual/Future/Imperfective			
Suffixes in Position II					
9	**áák**	Negative			
Suffixes in Position III					
3	**i**	Active	Perfective		
6	**a**	Active	{Imperfective	*or*	Subjunctive}
3	**ii**	Middle	Perfective		
6	**oo**	Middle	{Imperfective	*or*	Subjunctive}
3	**aa**	Passive	Perfective		
6	**ee**	Passive	{Imperfective	*or*	Subjunctive}
Suffixes in Position IV					
9	**N**	Relative	*or*	Narrative	

In fact, there are strong indications that I endings—that is, those containing the suffix ***-Vt**—were not part of the PF conjugational system, and that they instead have come into existence through a combination of an originally *derivational* suffix ***-Vt**, with *inter alia* repetitive meaning, plus S endings. This point will be further discussed in § 7. In §s 4–6, I endings will be included in our PF reconstructions, since the discussions in those paragraphs concentrate on a phonological development which ***-Vt** has participated in.

4 The Development from Pre-Fula to Common Fula

In (16), I present the steps in the phonological development of the finite verbal endings from PF to CF. The PF endings are presented in column 2 and the CF endings in column 8. Columns 3–7 represent different steps in the development from PF to CF; the sound changes are referred to by numbers and abbreviated names in the second row from the top, and they are presented below.

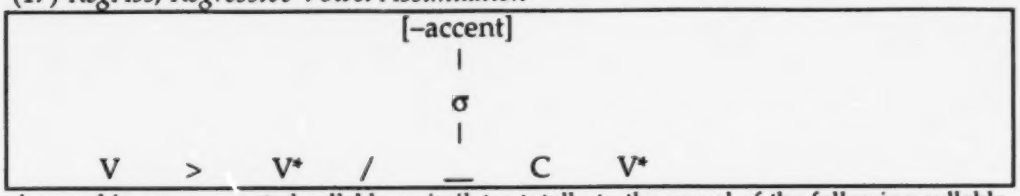
Let me repeat that CF is the latest common stage of all Fula dialects, constructed *primarily* by means of the comparative method, while PF is an internal reconstruction from CF.

(16) *From Pre-Fula to Common Fula*

1	2	3	4	5	6	7	8
	PF	(17) *RegAss*	(18) *K>Ø*	(19) *Glide*	(20) *VS*	(21) *N>Ø*	Com. Fula
P1A	**i**				**Ø**		**Ø**
P2A	**iN**					**i**	**i**
PNA	**ááki**		**áá.i**	**ááyi**	**ááy(i)**		**ááy(i)**
S1A	**a**				**Ø**		**Ø**
S2A	**aN**					**a**	**a**
SNA	**ááka**		**áá.a**		**áá**		**áá**
I1A	**Vta**	**ata**			**at**		**at**
I2A	**VtaN**	**ataN**				**ata**	**ata**
INA	**Vtááka**	**atááka**	**atáá.a**		**atáá**		**atáá**
P1M	**ii**				**i**		**i**
P2M	**iiN**					**ii**	**ii**
PNM	**ááki**				**ááki**		**ááki**
S1M	**oo**				**o**		**o**
S2M	**ooN**					**oo**	**oo**
SNM	**ááko**				**ááko**		**ááko**
I1M	**Vtoo**	**otoo**			**oto**		**oto**
I2M	**VtooN**	**otooN**				**otoo**	**otoo**
INM	**Vtáákoo**	**atáákoo**			**atááko**		**atááko**
P1P	**aa**				**a**		**a**
P2P	**aaN**					**aa**	**aa**
PNP	**ááka**				**ááka**		**ááka**
S1P	**ee**				**e**		**e**
S2P	**eeN**					**ee**	**ee**
SNP	**ááke**				**ááke**		**ááke**
I1P	**Vtee**	**etee**			**ete**		**ete**
I2P	**VteeN**	**eteeN**				**etee**	**etee**
INP	**Vtáákee**	**atáákee**			**atááke**		**atááke**

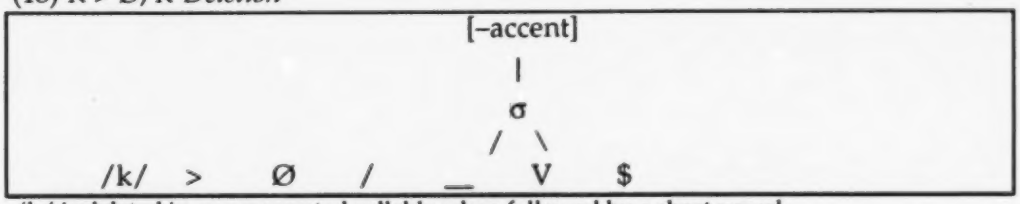
I have postulated five sound changes, cf. (17) – (21), all of which are phonetically plausible and in most cases firmly established independently of these endings.

(17) *RegAss; Regressive Vowel Assimilation*[8]



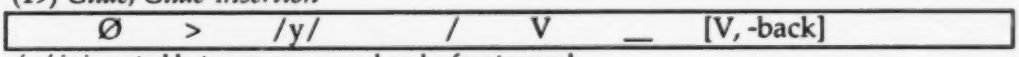
A vowel in an unaccented syllable assimilates totally to the vowel of the following syllable when a single consonant intervenes.

(18) *K > Ø; K-Deletion*



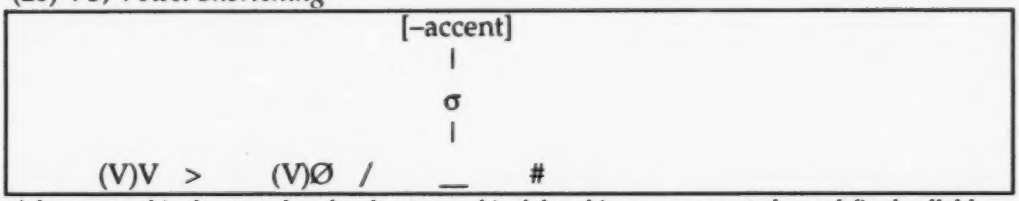
/k/ is deleted in an unaccented syllable when followed by a short vowel.
Alternatively: /k/ is deleted in (the beginning of) a monomoraic unaccented syllable.

(19) *Glide; Glide-Insertion*



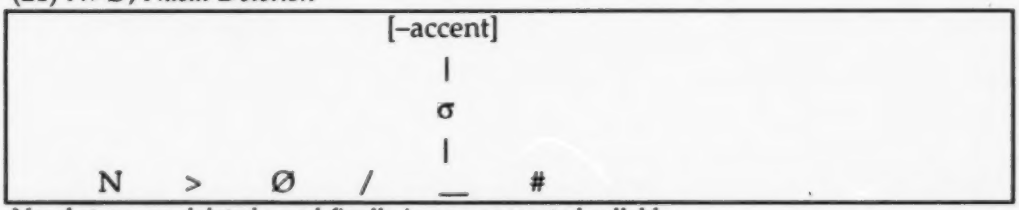
/y/ is inserted between any vowel and a front vowel.

(20) *VS; Vowel Shortening*



A long vowel is shortened and a short vowel is deleted in an unaccented word-final syllable.

(21) *N>Ø; Nasal Deletion*



Nasal stops are deleted word-finally in an unaccented syllable.

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[8] This regressive assimilation has only taken place in unaccented syllables. Therefore, the verbal root vowel is never assimilated, cf. for example P3A **warii** 'kill', S2A **rema** 'cultivate'. When the second syllable of N-forms like INM **-atááko**, INP **-atááke** have not assimilated to the following syllable, the reason is the accent, and not the quantity. Assimilation of long unaccented vowels is seen in possessive pronouns like **meelen** 'our(incl)' and **moolon** 'your(pl)'; cf. Endresen (In press).

5 Independent Evidence for Sound Changes and Reconstructions
5.1 Independent Evidence for *N "relative / narrative"

As mentioned earlier (cf. (12)), there are some striking final vowel quantity alternations in several pairs of *middle* and *passive* endings in CF. These V ~ VV alternations are parallelled in *active* endings by Ø ~ V alternations. The relevant details are repeated in (22). For simplicity, all these alternations will be referred to hereafter as 'vowel quantity alternations'. Let us also say that the endings in the left column in (22) have the "weak stage", while those in the right column have the "strong stage".

(22) *Final Vowel Quantity Alternations in CF Verbal Endings*

Weak Stage Ø (A) / V (M, P)		*Strong Stage* V (A) / VV (M, P)	
P1A	*-Ø	P2A	*-i
P1M	*-i	P2M	*-ii
P1P	*-a	P2P	*-aa
S1A	*-Ø	S2A	*-a
S1M	*-o	S2M	*-oo
S1P	*-e	S2P	*-ee
I1A	*-at-Ø	I2A	*-at-a
I1M	*-ot-o	I2M	*-ot-oo
I1P	*-et-e	I2P	*-et-ee

Compare the CF endings in (22) with the corresponding PF endings in (23).

(23) *The PF Endings Corresponding to the CF Endings in (22)*

P1A	*-i	P2A	*-i-N
P1M	*-ii	P2M	*-ii-N
P1P	*-aa	P2P	*-aa-N
I1A	*-a	I2A	*-a-N
I1M	*-oo	I2M	*-oo-N
I1P	*-ee	I2P	*-ee-N
I3A	*-Vt-a	I4A	*-Vt-a-N
I3M	*-Vt-oo	I4M	*-Vt-oo-N
I3P	*-Vt-ee	I4P	*-Vt-ee-N

It is my proposal that PF did not have any "weak stage"/"strong stage" alternations like the CF ones in (22). When CF had a "strong stage", PF had a final suffix *N, and when CF had a "weak stage", PF had no *N. These reconstructions presuppose two particular sound changes between PF and CF, that is, the Vowel Shortening in (20) and the Nasal Deletion in (21), whose effects are illustrated in (24).

If we postulate the relative chronological order Vowel Shortening > Nasal Deletion, the final *-N prevents Vowel Shortening in 2-endings. In (15), this *-N was interpreted as a relative/narrative suffix.

(24) *Vowel Shortening and Consonant Deletion*

	PF	*Vowel Shortening*	*Nasal Deletion*	*CF*
P1A	*-i	-Ø		*-Ø
P2A	*-i-N		-i	*-i
P1M	*-ii	-i		*-i
P2M	*-ii-N		-ii	*-ii

Alternations in Fula between long and short vowels do not only occur in finite verbs, but also in participles, noun and adjectives. Consider the CF participle endings in (25), all containing the 'o-class (human sg) suffix **-ɓo**, and all being identical to the MF endings, with the exception of CF IA ***-at-Ø-ɓo**, which varies dialectally between MF **-at-Ø-ɓo**, **-an-Ø-ɓo**, and **-ay-Ø-ɓo**.

(25) *CF Participles with 'O-Class Suffix*

PA	**-Ø-ɓo**
PM	**-ii-ɓo**
PP	**-aa-ɓo**
IA	**-at-Ø-ɓo**
IM	**-ot-oo-ɓo**
IP	**-et-ee-ɓo**

The endings in (25) may be interpreted as evidence in favor of the hypothesis that long vowels are protected against shortening when they are not word final. In (25), they are protected by the noun class suffix, while in (24) they are protected by the relative/narrative suffix ***-N**.

For short vowels, however, the environments in (24) and (25) are different. Short vowels are protected against deletion when followed by a word-final coda consonant, as in (24). In (25), however, the short vowel is deleted by an independent Vowel Syncope rule which can be formulated as in (26), and which also must be postulated to have had its effect between PF and CF. We shall see other examples of its effects later.

(26) *Vowel Syncope*

$$V > \emptyset \;/\; V\ C\ \underset{[-\text{accent}]}{\underset{|}{\underset{\sigma}{\underset{|}{__}}}}\ C\ V$$

A short vowel in an unaccented syllable is deleted when preceded by VC and followed by CV.

There are two different and mutually independent kinds of evidence for reconstructing PF ***N** "relative/narrative". The first one is not evidence specifically for a nasal stop, only for a consonant that assimilates to **m** when fol-

lowed by **m**. Consider the AD verbal endings plus 1sg ('me') enclitic object pronouns in (27).[9]

(27) *Verbal Endings Plus 1Sg Object Pronouns*

	MF	*PF*
P2	**-i-mmi**	***-i-N-mi**
P3	**-ii-yam**	
S1	**-Ø-am**	
S2	**-a-mmi**	***-a-N-mi**
SN	**-áá-kam**	
I1	**-at-am**	
I2	**-ata-mmi**	***-Vt-a-N-mi**
IN	**-atáá-kam**	

There are many problems connected with the historical development of the object pronouns, and all details cannot be discussed in this paper. However, there is apparently no other way of accounting for the geminate **m** in **-mmi** than to postulate a *C plus ***mi**. This *C has been rendered as ***N** on the basis of the second kind of evidence, to which we now turn.

The second kind of evidence for ***N** comes from the noun class suffixes of participles. In traditional analyses of Fula noun class suffixes, that is, in the descriptions found in most of the grammars mentioned in the references, the suffixes are said to occur in four different varieties or allomorphs (cf. the examples in (28)).

(28) *Some Fula Noun Class Suffixes*

	NGE-Class	NGU-Class	NDE-Class	NDI-Class	'O-Class
Variety 1	**-Nge**	**-Ngu**	**-nde**	**-ndi**	**-ƗƁo**
Variety 2	**-ge**	**-gu**	**-de**	**-di**	**-ƗƁo**
Variety 3	**-ye**	**-wu**	**-re**	**-ri**	**-jo**
Variety 4	**-e**	**-u**	**-re**	**-ri**	**-o**

Not all classes have four different varieties, as can be observed in (28), but that is irrelevant for my argumentation. There are certain principles governing the distribution of the different varieties (cf. (29)).

[9] The system of 1sg enclitic object pronouns in (27) is evidently a conservative feature. In many dialects, the system is simplified. In AD, **-yam** tends to spread at the expense of **-mmi** and to a certain degree **-kam**, while **-am** survives. In dialects from MA and westwards, **-kam** plays the same role as **-yam** in the east. FJ also has a variety **-lam**, "surtout quand la dernière syllabe du verbe est longue" (Arensdorff 1913:109).

(29) *The Principles for the Distribution of the Varieties of Noun Class Suffixes*

1. Nouns: All suffix varieties are found.

Examples:

Variety 1	**lii-Ngu** 'fish'
Variety 2	**cog-gu** 'trade
Variety 3	**njagaa-wu** 'lion'
Variety 4	**pucc-u** 'horse'

2. Adjectives: Variety 3 is found after vowel final stems, and Variety 4 after consonant final stems.

Examples:

Variety 3	**ndanee-wu** 'white'
Variety 4	**kes-u** 'new'.

3. Participles: Only suffix variety 1 is found (with one exception, cf. below).

Examples:

	Active	Middle	Passive
P	**loot-u-Ngu**	**loot-ii-Ngu**	**loot-aa-Ngu**
I	**loot-at-Ngu**	**loot-otoo-Ngu**	**loot-etee-Ngu**

Paradis (1986) has challenged the analysis in (28), claiming that on a more abstract level, there are only two varieties of each noun class suffix, let us call them Variety A and Variety B (cf. (30)).

(30) *Some Fula Noun Class Suffixes according to Paradis (1986).*

	NGE-Class	NGU-Class	NDE-Class	NDI-Class	'O-Class
Variety A	**-ge**	**-gu**	**-de**	**-di**	**-ɓo**
Variety B	**-e**	**-u**	**-re**	**-ri**	**-o**

With this analysis, one has to ask where the nasal element of Variety 1 suffixes in (28) comes from. Paradis postulates a 'floating **n**' when this nasal element is present, rendering for example the PM participle **loot-ii-^{n}-gu**, where I have marked the floating segment as "**-^{n}-**". The synchronic appropriateness of this analysis is irrelevant in this article, but it is interesting from a diachronic point of view, since it suggests the possibility of reconstructing PF participles as relative/narrative forms followed by a Variety A noun class suffix, rendering PF participle endings like those in (31), in which NGU-class suffixes are used.

(31) *Pre-Fula and Common Fula Participles with NGU-Class Suffixes*

	Pre-Fula	Common Fula
PA	***-i-N-gu**	***-(u)-Ngu**
PM	***-ii-N-gu**	***-ii-Ngu**
PP	***-aa-N-gu**	***-aa-Ngu**
IA	***-Vt-a-N-gu**	***-at-Ngu**
IM	***-Vt-oo-N-gu**	***-otoo-Ngu**
IP	***-Vt-ee-N-gu**	***-etee-Ngu**

The view that the prenasalization of the noun class suffixes of participles can be identified with the PF relative/narrative ***N** implies, as mentioned above,

an analysis in which the ending preceding the noun class suffixes was identical to a set of finite verbal endings, that is, the '2-endings' or relative/ narrative endings. Interestingly, there exists one extra IA participle ending, MF **-oo-**, CF and PF ***-oo-**, which apparently cannot be identified with a finite verbal ending. This suffix is followed by a Variety 2 noun suffix, for example, MF **mbar-oo-ga** 'killer [NGA-class], i.e. lion'. Since there are apparently no phonological reasons why **-oo-** has a different variety of the noun class suffix, the most natural alternative is to postulate a morphological difference between endings that are identical to finite verbal endings and those that are not.

5.2 The Independent Evidence for the Negative Suffix *-áák-

In (32), there is a summary of all negative endings ('N-endings') in PF and CF.

(32) *Pre-Fula and Common Fula Negative Endings*

	PF	CF
PNA	**áák-i**	**áá-y(-i)**
PNM	**áák-ii**	**áák-i**
PNP	**áák-aa**	**áák-a**
SNA	**áák-a**	**áá**
SNM	**áák-oo**	**áák-o**
SNP	**áák-ee**	**áák-e**
INA	**Vt-áák-a**	**at-áá**
INM	**Vt-áák-oo**	**at-áák-o**
INP	**Vt-áák-ee**	**at-áák-e**

In PF, there was a suffix ***-áák-** in all endings, while in CF, the ***k** in ***-áák-** had been lost when the following suffix in PF was a short vowel, that is, the suffix was monomoraic; cf. the sound change K-Deletion in (18). The environment for K-Deletion is reconstructed independently of this sound change, and should not warrant further comment here. Let me add, however, that it was not necessarily the presence of only one mora in the syllable that was the direct *cause* of K-Deletion. One may speculate that PF had a prominence system where, roughly, heavy (bi- or tri-moraic) syllables had some kind of prominence (stress, accent), while light (monomoraic) syllables lacked this prominence. On these assumptions, K-Deletion took place in syllables without prominence. These assumptions are supported by the fact that, according to Swift & al. (1965), GA has such a prominence system.

There is some interesting evidence for reconstructing a PF where the negative suffix always had the form ***-áák-**. As mentioned earlier (cf. (27)), in many Fula dialects, the 1sg enclitic object pronoun occurs *inter alia* in the forms **-mmi**, **-yam**, **-am**, and **-kam**. In many dialects, particularly from SO and eastwards, the form **-kam** occurs only after negative endings with **-áá** as its last element, cf. the examples in (33) from the Jam'aare dialect of northern Cameroon (taken from Noye 1974:22-23).

(33) *The 1sg Enclitic Object Pronoun* ***-kam*** *in Jam'aare Fula*

SN	**'O 'anndaa-kam**	'S/he does not know me'
IN	**'O hokkataa-kam**	'S/he is not giving me'

The most natural explanation why the 1sg enclitic object pronoun has the form **-kam** following negative endings with **-áá** as its last element appears to be to identify the **k** with the final ***k** of the negative suffix ***-áák-**. It is tempting to propose that the PF forms were ***-áák-a-m** and ***-Vt-áák-a-m**, so that ***k** was retained here because the addition of the 1sg enclitic pronoun ***-m** created a bi-moraic syllable, but still I have indicated in (34) that some element, for example ***i**, *may* have followed, by adding **X**, meaning "unknown segment". My main point is that the **k** in **-kam** is difficult to explain as anything but a retained **k** from the negative suffix.

(34) *Jam'aare Fula and Pre-Fula*

	Jam'aare	*PF*
SN	**-áá-kam**	***-áák-a-mX**
IN	**-atáá-kam**	***-Vt-áák-a-mX**

5.2.1 Were the **-áá-* and the **-k-* of PF Negative **-áák-* Separate Suffixes?

There are some endings in western Fula dialects that at first sight could be interpreted as evidence for the analysis of the negative ***-áák-** as a sequence of two suffixes, that is, ***-áá-k-**. These endings are some of those containing the PE (preterite element) **-no(o)-**, which are presented in (35).[10]

In most dialects the following generalization has no exceptions: *The PE follows Position III suffixes* – where 'Position III suffixes' are defined as in (13), (14), and (15). The only exceptions to this generalization are found in the NM/Pno (negative middle/passive with PE) endings in FT, FJ, and MA, where the PE comes between **-aa-** and **-k-** of the negative suffix (cf. (36)).[11]

For practical purposes, let us refer to the FT/FJ/MA type endings like **-a-noo-k-i** as 'pIII endings', where pIII means 'PE precedes position III', and the 'other dialects' type endings like **-aak-i-no** as 'IIIp endings', where IIIp means 'position III precedes PE'.

PIII endings cannot be used as evidence for postulating a PF or Common Fula morph boundary between ***-áá-** and ***-k-**. If that had been the case, one might have argued further that ***-k-** has never been present in PF active forms, just as there is no **-k-** in CF and MF active forms.

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[10] (35) is not complete for all dialects, because many grammars do not give full paradigms. Still, the material in (35) should suffice for our purposes.

[11] The segmentations of the endings in (36) may not always be exhaustive. I have only introduced those morph boundaries that are needed to show the relationship between the negative **-aa(-)k-** and the preterite **-no(o)-**. The IN endings are also discussed in section 6.1.

(35) *Modern Fula Finite Verbal Endings with Preterite Element*

	ACTIVE	MIDDLE	PASSIVE
P1no	**-(u)no** FT FJ SO CN **-(u)noo** FT MA	**-ino** FT SO CN **-inoo** FT MA **-inoke** FJ	**-ano** FT SO CN **-anoo** FT MA **-aano** FJ
P2no	**-(u)noo** FT SO CN **-(u)no** AD	**-inoo**	**-anoo**
P3no	**-iino** FT GA FJ MA SO CN **-ino** AD	**-inooma** FT MA **-inoma** GA **-inoke** FJ **-inooke** MA **-akeno** SO CN	**-anooma** FT FJ MA SO **-aanoma** CN **-aamano** GA
PNno	**-aanino** GA **-aano** FT FJ MA SO CN **-ayno** AD	**-aakino** GA SO CN AD **-anooki** FT FJ MA	**-aakano** GA SO CN AN **-anooka** FT FJ MA
S2no	**-anoo** SO **-ano** AD	**-onoo** SO **-ono** AD	**-enoo** SO **-eno** AD
SNno	**-aano**	**-aakono** GA	**-aakeno** GA
I1no	**-atno** FT **-atnoo** FT **-anno** FT MA SO AD **-ayno** GA FJ CN	**-otono** FT GA FJ MA SO CN **-otonoo** FT **-otoono** AD	**-eteno** FT MA SO **-etenoo** FT **-eteeno** FJ AD — CN
I2no	**-atnoo** FT **-annoo** FT SO **-anno** AD **-aynoo** CN	**-otonoo** FT SO CN **-otoono** AD	**-etenoo** FT SO CN **-eteeno** AD
INno	**-ataano**	**-ataakono** GA SO CN AD **-otaakono** GA **-atanooki** FJ **-otanooka** FT **-otanooko** FT **-otonooko** MA **-otonooka** FT	**-ataakeno** GA SO CN AD **-etaakeno** GA **-ataanoke** FJ **-etenooka** FT **-etanooke** FT **-etenooke** MA **-etenooka** FT

There are quite strong arguments for regarding pIII endings as innovations and IIIp endings as more conservative:
The first argument concerns the geographical distribution of pIII endings in relation to IIIp endings. PIII endings are found in a continuous western area, while IIIp endings are found all the way from GA in the extreme west to AD in the extreme east. It is well-known from dialect geography that innovations tend to spread from a center, while conservative features survive in the periphery (cf., for example, the pronunciation of the words for *mouse* and *house* in the dialects of Belgium and Netherlands, described in Bloomfield (1933, § 19.4)). Therefore, the geographical distribution of pIII and IIIp endings apparently indicates that IIIp endings are older than pIII endings.

(36) *Negative Middle/Passive with Preterite Element (NM/Pno)*

	FT / FJ / MA	Other dialects
PNMno	-a-noo-k-i	-aak-i-no
PNPno	-a-noo-k-a	-aak-a-no
INMno	-at-a-noo-k-i	-at-aak-o-no
	-ot-a-noo-k-a	-ot-aak-o-no
	-ot-a-noo-k-o	
	-ot-o-noo-k-o	
	-ot-o-noo-k-a	
INPno	-at-aa-no-k-e	-at-aak-e-no
	-et-e-noo-k-a	-et-aak-e-no
	-et-a-noo-k-e	
	-et-e-noo-k-e	
	-et-e-noo-k-a	

The second argument concerns the distribution of pIII endings in the verbal paradigm. The PE precedes Position III suffixes in negative middle/passive endings, but nowhere else. It is well-known that high frequency forms are more resistant to innovations than low frequency forms (cf. for example the discussion of Provençal verbal paradigms in Bybee 1985: 55-58). I have not had access to any comprehensive investigations of the frequency of Fula verbal forms, but it is my definite impression that in Fula, as probably in most languages, middle and passive forms have a lower frequency than active forms, and negative forms have a lower frequency than positive forms (cf. at least Labatut (1973), who describes a Cameroonian nomad dialect in which 3.3% of the verbal forms in his texts are passive). Admitting the insufficient statistical basis, there are reasons to believe that negative middle/passive is one of the least likely places in Fula verbal paradigms to resist innovations. There would have been greater expectations to find conservative forms in active forms, and particularly in positive, active forms. Since the PE follows Position III forms in all active forms and in all positive forms in all dialects, it is difficult to avoid the conclusion that pIII endings are innovations.

5.3 Independent Evidence for Regressive Vowel Assimilation

The sound change referred to as RVA (Regressive Vowel Assimilation) is also discussed in Endresen (1993). Its effect on verbal endings is seen in the PF suffix ***-Vt**, which in CF and MF has a vowel identical to the one in the following suffix, a state of affairs which would be difficult or impossible to account for without postulating the RVA.[12]

Notice, however, that only a vowel in an *unaccented* syllable assimilates to the vowel in the next syllable. There is apparently only one verbal suffix which is (always or sometimes) accented in all dialects: the negative suffix ***-áák-**. This

[12] In FT, GA, and MA we find the INM ending **-otaako** and the INP ending **-etaake**, with **o** and '**e**' in the first syllable, while other dialects have **-ataako** and **-ataake**, respectively, with '**a**' in the first syllable. The FT/GA/MA endings are undoubtedly post-Common Fula innovations. This problem is discussed in section 6.1.

suffix is the only verbal suffix whose vowel consistently does not assimilate to the vowel of the next syllable.[13]

5.4 A Note On Glide-Insertion

The PF PNA ending ***-ááki** is postulated to have gone through the following stages on its way to CF: ***-ááki** > ***-áá.i** > ***-ááyi** > ***-ááy(i)**, cf. (16). I have called the change from ***-áá.i** to ***-ááyi** Glide Insertion, a change formulated in (19). This change is postulated on the basis of the phonotactic principles of Fula: Fula syllables never lack an onset. When a sound change leads to the deletion of an intervocalic consonant, a semivowel will fill the empty onset position. Fula has a class of interrogative pronouns that consist of a class pronoun followed by (**-y**)**-e**, and the **y** is only present after vowel final pronouns (cf. for example, **nde-y-e** 'which (NDE-class)', **Ngal-e** 'which (NGAL-class)'. The **y** has a distribution which makes it possible to interpret it as an 'onset filler', and consequently, as independent evidence for the Glide Insertion change).

6 From Common Fula to Modern Fula

For practical purposes, the CF endings are repeated in (37).

(37) *Common Fula*

	ACTIVE	MIDDLE	PASSIVE
P1	***-(u)**	***-i**	***-a**
P2	***-i**	***-ii**	***-aa**
PN	***-aa-y(-i)**	***-aak-i**	***-aak-a**
S1	***-(u)**	***-o**	***-e**
S2	***-a**	***-oo**	***-ee**
SN	***-aa**	***-aak-o**	***-aak-e**
I1	***-at**	***-ot-o**	***-et-e**
I2	***-at-a**	***-ot-oo**	***-et-ee**
IN	***-at-aa**	***-at-aak-o**	***-at-aak-e**

Most of these endings do not require further comments, since they correspond to the MF endings or were already discussed in § 2.2.2. Here, I shall concentrate on the endings in (38), that is, two-thirds of the negative endings. The discussion of these endings has been postponed to this point because it is easier to understand my argumentation once the contents of §s 3, 4, and 5 have been read.

[13] There are also some exceptions in the endings that are not disscussed in this paper (cf. P3M, S3M, and S3P in (4)). It remains to be seen if it is possible to find arguments for regarding these endings as more recent formations. The Modern Fula INM and INP endings **-otaako** and **-etaake**, found in some western dialects, are discussed later in the paper.

(38) *Endings to be discussed in this paragraph*

PNA	***-aa-y(-i)**					Cf. § 6.1.
SNA	***-aa**	SNM	***-aak-o**	SNP	***-aak-e**	Cf. § 6.2.
		INM	***-at-aak-o**	INP	***-at-aak-e**	Cf. § 6.3.

6.1 The PNA Ending

In (39), the MF endings and the proposed CF reconstruction of PNA are repeated. The SO/AD variety **-ay** will be ignored; it is evidently the result of vowel shortening.

(39) *The PN Active Forms in MF and CF*

CF	MF	
***-áá-y(-i)**	MA, CN	**-aayi**
	SO, AD	**-aay**
	FJ, MA	**-aali**
	FT, GA	**-aani**

As I have mentioned earlier, I have not been able to choose between the two CF reconstructions ***-aa-y** and ***-aa-y-i**. In fact, on the basis of comparative reconstruction of CF from the modern dialects, the preferable alternative is ***-aa-y-i** (cf. 6.1.1 below), while ***-aa-y** is in better agreement with my systematic internal reconstruction of PF and the sound changes I have postulated (cf. 6.1.2).

6.1.1 Comparative Reconstruction

This discussion is divided into two parts. First, I shall discuss the relationship between **-aayi** and **-aay**; and secondly, the relationship between **-aayi** and **-aali** / **-aani**.
The relationship between MA/CN **-aayi** and SO/AD **-aay** can be accounted for by the phonetically plausible sound change *High Vowel Deletion* (cf. (40)).

(40) *High Vowel Deletion*

/i/ > Ø / /y/ __ #

The high vowel /i/ is deleted word finally after /y/.

There is independent evidence for this sound change in the pronunciation of the numeral 'four'. Like the numerals 'two', 'three', and 'five' (and combinations with these) it has three forms (cf. (41)).

(41) *The numeral 'four'*

	Persons	Non-Persons	Diminutives
MA/CN	**nay-o**	**nay-i**	**nay-on**
SO/AD	**nay-o**	**nay(-i)**	**nay-on**

In these numerals, **-o**, **-i**, and **-on**[14] are noun class suffixes, and the same suffixes are found with the numerals 'two', 'three', and 'five' (cf. for example 'three' in (42)).
The pronunciation **nay** is accounted for most naturally by means of a change in accordance with (40), that is, **nayi > nay**. Furthermore, *High Vowel Deletion* is paralleled in several Fula dialects by a change **Vwu > Vw** (cf. **teewu ~ teew** 'meat', where **-u** is a NGU-class suffix).

(42) *The numeral 'two', 'three', and 'five'*

	Persons	Non-Persons	Diminutives
MA/CN/SO/AD	**ɓiɓi-o**	**ɓiɓi-i**	**ɓiɓi-on**
MA/CN/SO/AD	**tat-o**	**tat-i**	**tat-on**
MA/CN/SO/AD	**njow-o**	**jow-i**[15]	**njow-on**

Let us consider AD negative forms in more detail. In fact, there are clear dialect internal indications that a change **-aayi > -aay** has taken place. In the AD dialect, the negative suffix is usually accented, but the accent is found one syllable to the left when the negative suffix is the last syllable of the word and it is not followed by any clitics (cf. (43)). There is one exception, however, as can be seen from (43f): the PNA ending **-ááy** is always accented. A reasonable explanation is that **-ááy** still behaves as when it was still followed by **-i**.

(43) *Negative forms in Aadamaawa Fula*

a.	**mi 'ánnd-aa**	(SNA)	I do not know
b.	**mi 'annd-áá maa**	(SNA)	I do not know you
c.	**mi nyaam-át-aa**	(INA)	I shall not eat
d.	**mi nyaam-at-áá ndi**	(INA)	I shall not eat it
e.	**mi ɓaan-áák-i**	(PNM)	I did not sleep
f.	**mi nyaam-áá-y**	(PNA)	I did not eat

Let me conclude, therefore, that on the basis of the application of the comparative method and on the basis of internal relations in the AD dialect, ***-áá-y-i** turns out to be a better CF PNA candidate than ***-áá-y**.

The relationship between the three modern forms PNA endings **-aayi**, **-aani**, and **-aali** cannot be of a phonological character, because there are no other cases of an interdialectal correspondence between **y**, **n**, and **l**. There can be little doubt, however, that **-aayi** is the most conservative of these three endings, if we assume that the relationship between positive and negative endings has originally been the same throughout the system.

I conclude that the variation between **y**, **n**, and **l** is the result of some analogical changes. Unfortunately, the details are poorly understood, and have to be worked out on the basis of a more detailed study of western Fula dialects. Nevertheless, allow me to add a few remarks.

[14] Some dialects have **-oy** or **-ony** instead of **-on**.
[15] SO also has **joy**.

One might propose that the **n** in **-aani** is the result of an influence from endings containing the preterite element (cf. the PNAno ending **-aano** in FT/FJ/ MA/SO/CN).
As for the **l**, it could perhaps be connected to some general tendency to "intercalate" this consonant between morphs, in accordance with Labouret (1952: 39-40):

> Lorsque le pronom régime de la 1re personne suit immédiatement le verbe on intercale d'ordinaire entre le verbe et le pronom régime, dans les dialectes occidentaux l'occlusive dorsale *k*, dans ceux du Fouta Dialon la latérale *l* et dans les parlers orientaux la semi-voyelle *y*. Cette adjonction n'a pas lieu quand la dernière syllabe du verbe se termine par une consonne,...

– but this does not explain much. The question remains where these consonants come from. In the case of **y** and **k**, it is probably not a question of "intercalation", since the object pronouns **-yam** and **-kam** have simple historical explanations, based on the material in (27). The details of this problem have to be left for a future study (but cf. footnote 9).

6.1.2 Internal Reconstruction

The basis for proposing a CF reconstruction ***-áá-y** instead of ***-áá-y-i** is the postulated systematic relationships between the different PF endings in (14) and the sound changes between PF and CF (cf. (44)).

(44) *Some generalizations about PF endings*

1 In PF, all N endings have the suffix ***-áák** in Position II.
2 In PF, all XN endings have the same suffix in Position I as X1 and X2 endings with the same voice, where the variable X equals P, S, or I.
3 The sound changes between PF and CF included (18) *K-Deletion* and (20) *Vowel Shortening*.

On the basis of (44), PF ***-áák-i** and CF ***-áá-y** follow almost automatically. The only additional hypothesis that has to be made is the phonotactically motivated sound change (19) *Glide Insertion* which applies in this ending only.

The problem, however, is that if we choose the CF reconstruction ***-áá-y**, we have to explain why some dialects have added an **-i**. On the other hand, if we choose the CF reconstruction ***-áá-y-i**, we have to explain why this ending should be an exception to the sound change *Vowel Shortening*. I am at the present stage not able to choose between these two solutions. This has to be left for a future study.

6.2 The SN Endings

The SN endings have a peripheral status in most MF dialects. SNA **-aa** is found in all dialects, but often with a very narrow distribution. For example, in AD, **-aa** is used only in **'anndaa** 'does not know', **yiîaa** 'will not', **woodaa**

'has not / there is not', **wonaa** 'is not', and the defective verbs **walaa** 'has not / there is not' and **siwaa** 'not yet'.[16] In the CN dialect of Gommbe, **-aa** is, in addition, used with verbs denoting qualities (Arnott 1970:296). SNM **-aako** and SNP **-aake** do not seem to occur outside GA and FJ.

Some Fula scholars have apparently been of the opinion that SNA **-aa** is a shortened version of PNA **-aay(i)/-aali/-aani**:

> La voix active connaît en poular un suffixe négatif du Parfait en ®*ni*, dont la désinence ® qui vient d'être citée pourrait être une contraction, [...]. (Labouret 1952:75)
> Einige Verba [...] verkürzen -®*y/-ay* des negierten Aorists zu unbetonten -® bzw. -*a* [...]. (Klingenheben 1963:65)

Labouret and Klingenheben seem to have been unaware of the FJ/GA endings SNM **-aako** and SNP **-aake**, which clearly constitute a system together with SNA **-aa**.[17] In GA (Swift & al. 1965:279-87) all three SN endings are characterized as 'negative, stative', and have a quite general usage. The PF reconstructions, SNA ***-aak-a**, SNM ***-aak-oo**, and SNP ***-aak-ee**, also seem evident.

Not only SNA ***-áá**, but also SNM ***-ááko** and SNP ***-ááke** have to be included among the endings of CF. SNM ***-ááko** and SNP ***-ááke** cannot be FJ/GA innovations. As already mentioned in § 3, PF I endings can be analyzed as ***-Vt** plus S endings, cf. (45), where the relevant endings are repeated; furthermore, the suffix ***-Vt** of the I endings seems to be etymologically identical to the verbal derivation suffix **-t/-it/-ut**, with *inter alia*, repetitive meaning—cf. § 7. *This analysis presupposes a stage in which the whole set of nine S endings existed.*

(45) *Pre-Fula S and I Endings*

	A	C	T		M	I	D		P	A	S	
	I	II	III	IV	I	II	III	IV	I	II	III	IV
S1			**a**				**oo**				**ee**	
S2			**a**	**N**			**oo**	**N**			**ee**	**N**
SN		**áák**	**a**			**áák**	**oo**			**áák**	**ee**	
I3	**Vt**		**a**		**Vt**		**oo**		**Vt**		**ee**	
I4	**Vt**		**a**	**N**	**Vt**		**oo**	**N**	**Vt**		**ee**	**N**
IN	**Vt**	**áák**	**a**		**Vt**	**áák**	**oo**		**Vt**	**áák**	**ee**	

[16] The verbs **walaa** and **siwaa** are referred to as defective because theire paradigms are defective: they have no other forms.

[17] Stennes (1967:146) has the formulation "{-áayi} > -**áa** after the verb roots {'ánd- yíl- wál- wóod-}", which is a synchronic allomorphy rule with no diachronic/etymological implications. On the other hand, such allomorphy rules may have certain drawbacks, since the set {'ánd- yíl- wál- wóod-} is not semantically arbitrary. All members signify states. The two first verbs, 'know' and 'want, like' signify private states, and the two last ones concern existence.

6.3 The INM and INP Endings

The INM and INP endings will be treated together. The MF endings and the CF reconstructions are repeated in (46), where the other middle and passive I endings are also included, for comparison.

(46) *The Middle and Passive I-Endings in MF and CF*

	CF	MF
I1M	***-oto**	**-oto**
I2M	***-otoo**	**-otoo**
I1P	***-ete**	**-ete**
I2P	***-etee**	**-etee**
INM	***-atááko**	**-ataako** GA FJ SO CN AD **-otaako** FT GA MA
INP	***-atááke**	**-ataake** GA FJ SO CN AD **-etaake** FT GA MA

The FT/GA/MA INM/INP endings differ from the eastern ones by having the same vowel in the imperfective **Vt** suffix as in the final suffix. This must be due to an analogical influence from the I1 / I2 endings, for example as in (47).[18]

(47) *Analogical Uniformation*

-ot	**-o**		**-ot**	**-o**	I1M
: |	|	>	||	|	
-at-áák-o			**-ot-áák-o**		INM

When the endings have vowel combinations that are unexpected on the basis of the Regressive Vowel Assimilation in (17), these combinations must be explained as later analogical changes.

6.4. The S3 Endings

The S3 endings (cf. (48)) have a geographical distribution which indicates that they are a local innovation: they are found in a continuous sub-area. They are found consistently in CN only—they are referred to as Vague Future in Arnott (1970)—with traces in AD. S3A is also found in SO.

(48) *Modern Fula S3 Endings*

	A (ACTIVE)	M (MIDDLE)	P (PASSIVE)
S3	**-(u)ma** SO CN (AD) — FT GA FJ MA	**-ooma** CN (AD) — FT GA FJ MA SO	**-eema** CN (AD) — FT GA FJ MA SO

The S3 endings are exceptions to the Regressive Vowel Assimilation in (17). If they are younger than this sound change, this state of affairs gets a natural explanation.

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[18] In (47), "|" and ":" represent *lexical connections* à la Bybee (1985). "|" represents a higher similarity than ":".

Apparently, there are no traces of the S3 endings in dialects from MA and westwards. On the other hand, western dialects have a particle **maa** which is combined with the S1 endings to express future (cf. the MA sentence in (49) (from Fagerberg-Diallo 1984)).

(49) *Maasina dialect*

Maa	**mi**	**hollu**	**mo**	'I will show her/him'
PRT	I	show-S1A	her/him	

The construction in (49) is a strong indication that S3 endings have come into existence—in a post-Regressive Vowel Assimilation period—by suffixing the particle **maa** to S1 forms, turning for example **Maa mi hollu mo** into **Mi holluma mo**.

6.5 The S1M Endings

The MF and CF S1 endings are repeated in (50) and (51), respectively.

(50) *Modern Fula S1 Endings*

	A (ACTIVE)	M (MIDDLE)	P (PASSIVE)
S1	**-(u)**	**-o** FT GA FJ MA SO CN AD **-a** MA SO CN AD **-(u)** AD	**-e**

(51) *Common Fula S1 Endings*

	A (ACTIVE)	M (MIDDLE)	P (PASSIVE)
S1	***-(u)**	***-o**	***-e**

The use of -(u) as a S1M ending is clearly an AD innovation. It is an influence from S1A, in a dialect area where the disintegration of the voice system is widespread.

The S1M **-o** ending is found in all dialect areas, although only sporadically in MA and AD. The **-a** ending is found only from MA and eastwards. In SO and CN, the two endings are semantically distinct: **-o** is a desiderative ending and **-a** an imperative ending.

It seems that the **-a** ending, which has a continuous distribution through the MA, SO, CN, and AD dialects, is an innovation, while the **-o** ending, which has a discontinuous distribution, is the conservative form. Let me present an apparently reasonable description of what has happened.

The whole analysis in this paper is based on the assumption that the morphological relationship S1 vs. S2 is exactly the same as the relationship P1 vs. P2 and I1 vs. I2. In PF, this relationship can be expressed as ***-X** vs. ***-X-N** (cf. the PF S1 and S2 endings in (52)).

(52) *Pre-Fula S1 and S2*

	A (ACTIVE)	M (MIDDLE)	P (PASSIVE)
S1	-a	-oo	-ee
S2	-a-N	-oo-N	-ee-N

When we come to CF, the relationship has turned into a quantity opposition in the middle and the passive, and a *-Ø/*-(u) vs. *-a opposition in the active (cf. (53)).

(53) *Common Fula S1 and S2*

	A (ACTIVE)	M (MIDDLE)	P (PASSIVE)
S1	-(u)	-o	-e
S2	-a	-oo	-ee

Because of the loss of the PF *-a in S1A, the similarity between S1 and S2 has been reduced. On the other hand, the similarity between S1 and the infinitive has increased (cf. (54)). Infinitive active and S1 both have *-(u), and infinitive passive and S1P both have a suffix containing the vowel e. In CF, therefore, the S1 endings resemble the infinitive endings just as much as the S2 endings. On this basis, it is not surprising that some dialects strengthen the relatedness between S1 and infinitive by changing S1M from *-o to -a (cf. (54)).

(54) *S1, S2, and Infinitive*

	A (ACTIVE)	M (MIDDLE)	P (PASSIVE)
Infinitive	-(u)-INF	-aa-INF	-ee-INF
S1	-(u)	-o > -a	-e
S2	-a	-oo	-ee

7 More about Pre-Fula
7.1 On the Origin of *-Vt

In (14), the reconstructed PF verbal endings were presented as sequences of one, two, or three suffixes distributed over four different positions. (55) summarizes which suffixes belong in which positions, and also what morpho-syntactic categories are expressed by suffixes in each position; I have not found any appropriate category name for position IV.

(55) *Pre-Fula Suffixes and their Positions and Categories*

I	II	III	IV
Aspect	Polarity	Aspect Voice Mood	relative / narrative
Vt	**áák**	**i / a** **ii / oo** **aa / ee**	**N**

One striking feature of this system is that aspect is expressed in position I as well as in position III, on both sides of II, the polarity position. There is a general tendency in languages of the world for inflectional morphemes to be ordered in a particular way in relation to the stem, so that for example aspect exponents are closer to the stem than mood exponents (Bybee 1985:33-35). What Bybee says about the ordering of aspect, tense, mood, and person is not relevant for our discussion, since the categories tense and person are not expressed in Fula, and since aspect and mood are both expressed in position III. Still, it is in accordance with her generalizations when aspect in position I is closer to the stem than mood in position III. But Bybee (1985: 178) has some interesting remarks about negation:

> Other details point to a marking of negation early in the verb form: in Yukaghir and Burushaski, the negative prefix appears to be the *only* inflectional prefix. In Maasai, Pawnee and Zapotec, the negative prefix precedes all other prefixes. In languages where negation is a suffix, it occurs closer to the stem, and thus earlier in the verb form, than other inflectional suffixes (e.g. in Garo, Ojibwa, and Zapotec). Thus negation is a category where position with regard to other categories tends to be determined not in relation to the verb stem, but in an absolute left-to-right fashion.

In Fula, a strictly suffixing language, the negative suffix precedes all other inflectional suffixes, except ***-Vt**. It is my contention that the exceptional behavior of ***-Vt** has a natural diachronic explanation: the suffix ***-Vt** has entered the set of inflectional suffixes more recently than the suffixes in position III-IV, through a process of *grammaticalization* of a derivational suffix.

All Fula dialects have a verbal derivational suffix **-(i)t** (sometimes also **-ut**) whose most important meanings are reversive, repetitive, reflexive, retaliative, and intensive (Arnott 1970:340-44). The phonetic and semantic similarity between ***-Vt** and **-(i)t** is too striking to be a mere coincidence. I shall present a short discussion of both the phonological and the semantic aspects here, but leave a more thorough presentation for Endresen (in preparation).

The reflexes of PF ***-Vt** in the CF I endings in the paradigm of (13) are ***-at**, ***-ot**, and ***-et**, corresponding to MF **-at/-an/-ay**, **-ot**, and **-et**. There is in addition a fourth variety without a vowel, ***-t** (MF **-t**), which occurs in the environment **V**[+coronal, +sonorant]__**V**, as a result of the sound change

Vowel Syncope in (26). The sound change RVA (Regressive Vowel Assimilation) in (17) forces us to claim that at a certain stage in the history of Fula, that is, immediately after RVA had taken place, it was impossible to have several phonologically distinct suffixes with the structure ***-Vt**: the vowel ***V** always had to be identical to the following vowel. Since the derivational suffix {**-it, -ut, -t**} and the inflectional suffix {**-at/-an/-ay, -ot, -et, -t**} are phonologically distinct in all MF dialects, we have to conclude that they were already distinct in CF. They became distinct at a certain time between RVA and CF, but we have no arguments for claiming that they were distinct at any time before that, for example, in PF.

Semantically, the derivational suffix {**-it, -ut, -t**} and the inflectional suffix {**-at/-an/-ay, -ot, -et, -t**} are closely related. The meanings of the derivational suffix were mentioned above, and the meaning of the inflectional suffix is habitual or future (in I1), or imperfective (in I2, IN). Particularly, the derivational meaning repetitive—i.e., the action is done a second time (Arnott 1970: 341)—and the inflectional meaning habitual —i.e., the action is a habit, a normal/current practice (Arnott 1970: 271)—are close.

There are strong reasons to believe, therefore, that the PF paradigms presented earlier in this paper should be simplified to (56).

(56) *Pre-Fula Finite Verbal Endings, Revised*

	A	C	T		M	I	D		P	A	S	
	I	II	III	IV	I	II	III	IV	I	II	III	IV
P1			**i**				**ii**				**aa**	
P2			**i**	**N**			**ii**	**N**			**aa**	**N**
PN		**áák**	**i**			**áák**	**ii**			**áák**	**aa**	
S1			**a**				**oo**				**ee**	
S2			**a**	**N**			**oo**	**N**			**ee**	**N**
SN		**áák**	**a**			**áák**	**oo**			**áák**	**ee**	

7.2 On the Position III Suffixes

The last point to be discussed is a phonological difference among position III suffixes (cf. for example (56) above). In PF, *active* position III suffixes are *short* vowels: P **-i**, S **-a**, while *middle* and *passive* position III suffixes are *long* vowels: PM **-ii**, SM **-oo**, PP **-aa**, and SP **-ee**.

Active is generally the unmarked (*unmarkiert*) member of the category voice, while middle and passive are marked (*markiert*) members. Furthermore, unmarked members can be 'markerless' (*merkmallos*), while marked members are generally 'markerful' (*merkmaltragend*).

We cannot exclude the possibility that at an earlier stage, the active position III suffixes have been only aspect markers, while the middle and passive position III suffixes have been sequences of two suffixes, one of them a voice marker, and the other one identical to the short vowels used in the active. Let

me present this hypothesis as in (57), where I have assumed that the voice markers precede the aspect markers, in accordance with, for example, Bantu languages and Bybee's (1985) relevance principle.

(57) *Hypothetical PF Voice+Aspect Suffix Sequences*

	ACTIVE	MIDDLE	PASSIVE
	III	III	III
P	*-i > *-i	*X-i > *-ii	*Y-i > *-aa
S	*-a > *-a	*X-a > *-oo	*Y-a > *-ee

The phonological value of *-X and *-Y has to be left for a future study.

8 Summary

In this paper, three diachronic stages of Fula have been postulated—PF, CF, and MF. In PF, 18 conjugational endings have been distinguished—cf. (56)—constructed from 8 different suffixes. In CF, the number of endings increased to 27—cf. (11)—and the suffixes to 9, due to a grammaticalization of a derivational suffix. From a phonological point of view, 5 sound changes were needed between PF and CF.

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